January 2022

Issue 34

THE SPECTRUM SHOW

Magazine

PROTEK SOFTWARE

The games and story

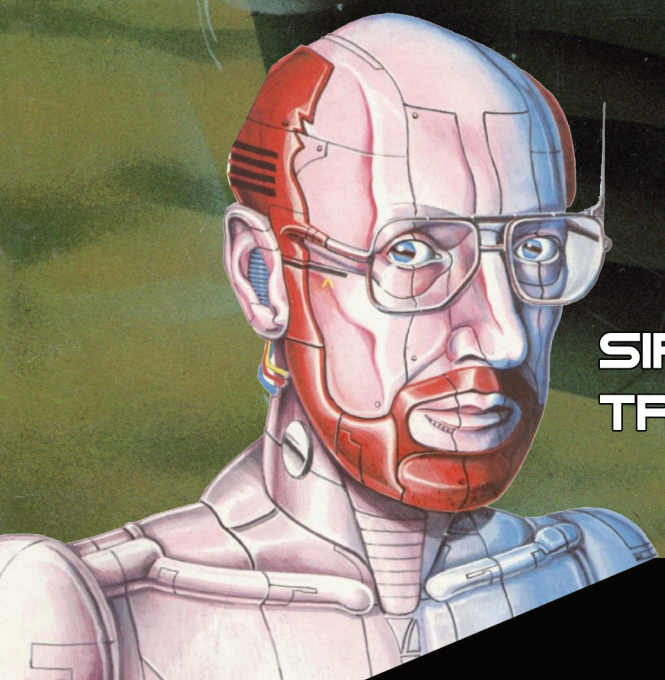
HARLEQUINN 128

Building the machine from scratch

OLD COMPUTER SHOPS

Delving into memories of small independents

PLUS
FORTRAN ON THE SPECCY
GRUMPY OGRE'S ADVENTURES
AND MORE



SIR CLIVE SINCLAIR TRIBUTE

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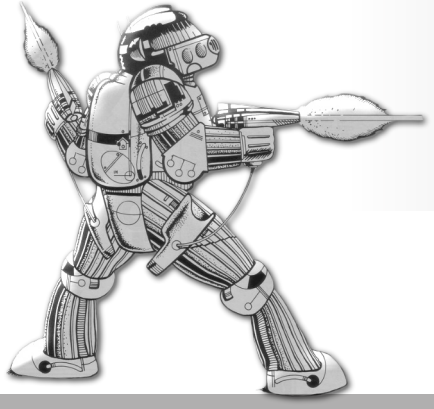

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EDITORIAL

Welcome to this issue of The Spectrum Show Magazine.

Here we are again. It seem like ages since the last one, but there are so many things going on it is difficult to keep up with the world!

I was only thinking the other day about Youtubers and how different they are to the normal media. For people like myself with relatively small number of subscribers and frequent, scheduled outputs, the pressure is on to keep going.

Take one episode of my show and compare it to a 30 minute episode of something on television. The TV show has one or more of the following. Writer, director, actor, graphic artist, music artist, audio producer, cameraman, video editor, producer and effects artist. All of the jobs are done by a single Youtuber.

It's quite amazing really considering the quality of some of the channels I enjoy watching.

On to a sadder note, and the passing of Sir Clive Sinclair. I can't really explain how much he changed my life and the life of others around the world. I owe him a lot and my small video tribute was my way of saying thank you. I have used that as a basis for the printed version in this issue.

On to more happier Spectrum related things then and this issue has a feature on Protek. Their most famous game, Hunter Killer, was actually an updated version of a type-in found in a magazine.

This is not the only instance of this happening though and there were many games released that originated in magazines.

How did this happen I wonder? Did the author approach the company and not tell them, or did the company approach the author?

Another interesting fact is that the game could use Interface One to allow a multiplayer game. One of a very few that used that device.

Jumping forward many years and the Spectranet interface could also provide this function, but again very few games (I can only think of one - Spactank) actually used it.

This issue also has a great section added to the Grumpy Ogre's Adventure Page. The author of the fantastic book Spectrum of Adventure has agreed to let me reproduce one of the chapters in the mag. A great read and something to give the feeling for the brilliant book.

Also in this issue is a quick overview of a recent (August 2021) visit to the Arcade Club in Bury with Geoff.

It was great to get back to the arcade machines and there were certainly a lot of them. We spent over four hours (sadly had to leave for other things) walking round and playing some true classics. There were also games that do not have a version on the Spectrum!

Remember when..

If you have been watching the show for a long time you may recall I produced two DVD sets covering series one and two. These were sold more or less at cost price and the limited batches sold out. I have just found a few remaining copies in a box, and asked anyone on Patreon if they were interested. They were!

I had more enquiries than I had DVDs so I began to look at Blu-Ray. I was hoping to get series one and two onto a single disc which should work out cheaper than 5 DVDs, two cases plus labels, etc..

As I moved slowly forward, purchasing a Blu-Ray authoring package, I ran out of space, unable to fit the 20 episodes plus all of the DVD extras on the disc. I then looked at dual layered discs and found a duplicator who could do me a small run.

So then it was back to the authoring software to build the menus and prepare the image for final burning. I did a few tests to check quality and navigation, and then, with more space now available, set about producing some more extras.

The final production run took place and the discs sold out very quickly. I have now ordered a second batch so if you missed out, keep an eye on my website for the new items to arrive.

The finished products were offered to my Patrons first at varying rates (like I did with the magazine), with any spare being offered to non-patrons.

With the interest shown in that, I am planning to releases series three and four together very soon.

To keep up to date on the progress, hop over to my Patreon page or website.

patreon

Want to support the show and magazine?
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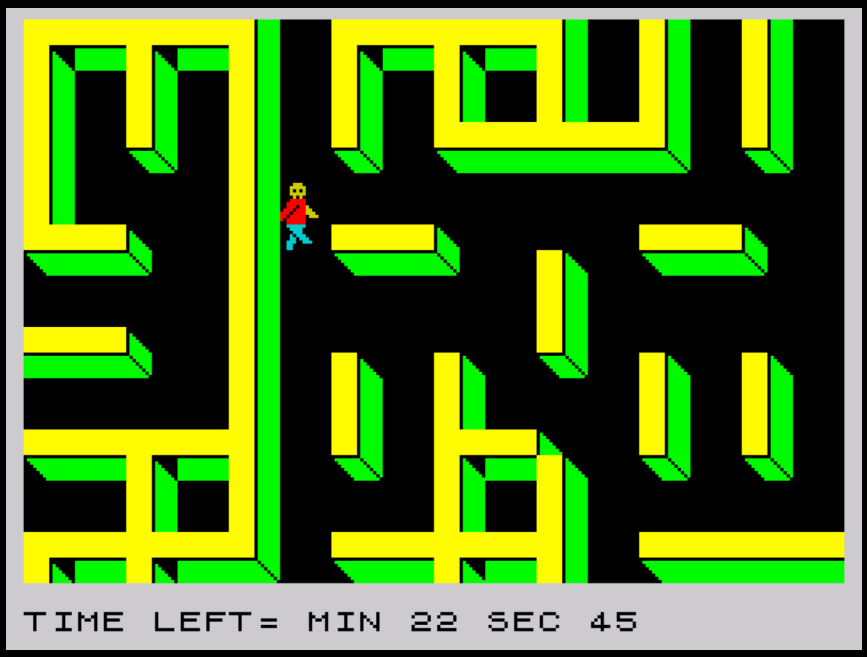
WHEN GAMES GO BAD

I CAN'T BELIEVE THEY SOLD THIS

£5.50

Here we have a classic bad game that gives us nothing in gameplay that a simple type-in can not deliver.



The whole premise is to escape the maze in the given time limit. There are no enemies, no puzzles, just a badly drawn man in a badly drawn maze.

The character scrolling is terrible, the animation of the main character is poor and the game just plods along at a snail's pace.

The sound consists of a single effect that sounds like someone with a wind problem and control is very hit and miss.

I can't believe they sold this!

SPY HUNTER

Publisher:	U.S. Gold
Year:	1985
Price:	£7.95

Spy Hunter is one of those memorable arcade games. It was released in 1983 by Bally Midway and moved away from the usual platform, shooting or racing games. It sort of merged racing with shooting to provide a good challenging game.

Originally planned as a James Bond title, that was dropped, probably due to licensing issues, and it became Spy Hunter.

You had to drive along a road, avoid or shoot enemy vehicles and upgrade your weapons. The skilled player could change the car into a boat by driving into a boathouse, and do the same on water.

The roads turned and branched making for a challenging game.

Most micros got a version and the Spectrum was not left out. Released by US Gold in 1985, the game follows the arcade closely. The plot says you are a world class spy but obviously not James Bond, and you are driving your ultra-equipped turbo-charged spy mobile.

The road is crawling with enemy agents and you have to destroy them or get destroyed. Simple as that.

The game does have the scrolling road although the Spectrum scrolling is character based. This though doesn't detract too much as most of your time you are concentrating on not getting smashed off the road.

The sprites are also bigger than the arcade so manoeuvring is sometimes tight.

You head off shooting anything that can be shot and trying to keep on the road. Some cars can not be shot and have to be either avoided or pushed off the road into rocks, boulders or even grass.

If you get far enough, a weapons van will arrive and if you can drive into the back of it, you can upgrade your weapons. Here you can get things like missiles or oils slicks, all things to give you a better chance of surviving.

If you take the correct fork in the road, you switch to a jet boat and continue the game..

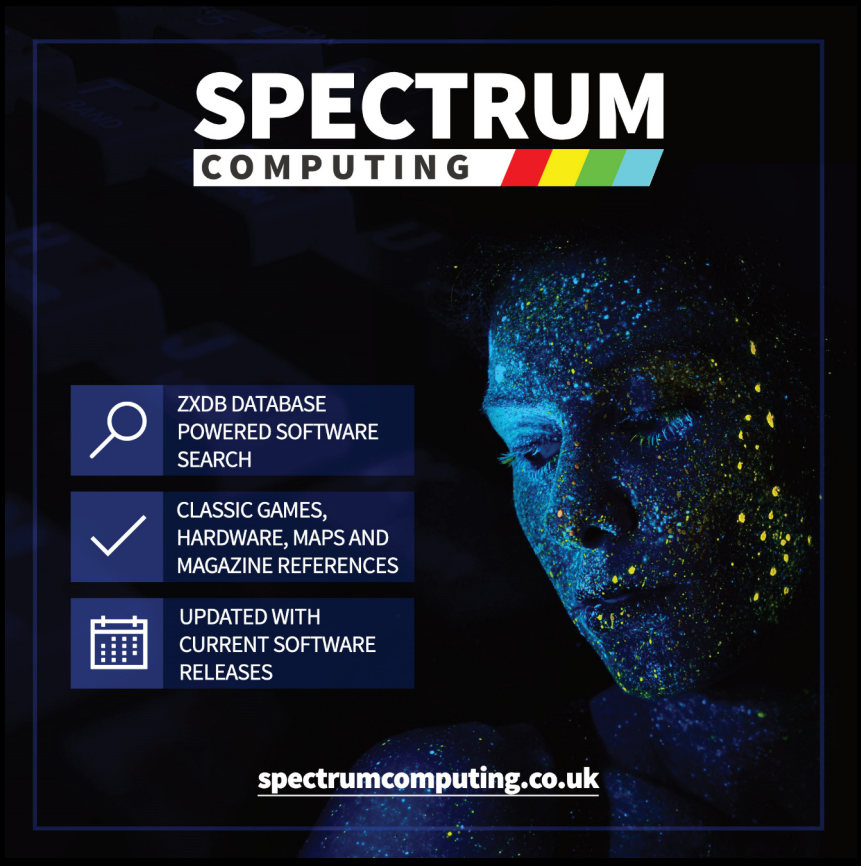
The graphics are good, large and smooth, but the firing mechanism is a bit odd. It seems you only fire when you move. It's hard to explain but I found myself stabbing the direction keys to fire, even though I was holding down the fire button.

The sound is OK but nothing really special. Some decent effects for shooting and explosions, but that's about all.

Difficulty wise, you can choose novice or expert and in novice mode, you get a decent long game out of it.

I remember buying this game and playing it for ages. Just trying to get a little bit further. At that time I don't think I'd seen it in the arcades, but like now, I really enjoyed the challenge.

A good game and definitely worth playing.



PIT-FIGHTER

Publisher:	Domark
Year:	1991
Price:	£ 11.99

The arcade version of this state-of-the-art arcade beat-em-up used digitised fighters instead of the usual sprite-based characters, with each move filmed and placed in the game.

Doing this for the Spectrum release would be impossible considering the amount of memory available and obviously the colour and resolution limitations.

The game does try to give the player that arcade feel, with introductions to the fighters and some decent music. As soon as the game begins though, it all falls flat.

You can play one of three characters, each with their own strengths and weaknesses, and have to fight your way to the final of the Pit Fighting championship.

You will face seven opponents, and after each win, if you are good enough to get that far, there is a grudge match.

There are items scattered about you can pick up and use as well, if you can get to grips with the control and awkward in/out of the screen movement of the characters.

As with most fighting games, there are numerous controls. Without the fire button pressed, the player can move around, including moving back 'into' the screen, trying to get into position for an attack, or trying to dodge an attack.

With the fire button pressed the player can jump, kick, punch duck or perform a special move.

The game is multi-load if you got it on tape so different parts are loaded as you progress.

The arcade graphics looked stunning but the Spectrum versions look embarrassing. It looks like they have taken badly drawn images and then stretched them, causing them to look pixelated and almost ZX81-like.

The animation is jerky, if you can even call it animation, and the movement slow. The fighters look poor, chunky and badly shaded. There is bad colour clash when a blow is landed making the screen look a mess.

You can just about control the fighter, although some key presses have such a delay that you often think nothing is happening. The jump looks like the player is just moving up the screen and picking anything up, even the other fighters is hit or miss. There are times when, despite stabbing the keys frantically, your character just stands there doing nothing and then get smacked in the mouth.

Because of the scaling when the fighters move back into the scenery it can sometimes look like one player is a giant and bad collision detection means a fighter at the back of the screen can hit you when you are at the front. Most unfair.

There is a nice tune playing throughout, which means there are no sound effects.

Despite these flaws, and despite the magazines hating it, I enjoyed playing it for a while. I could never manage to get the fighter to do what I wanted most of the time, so I guess it's a bad game for that, but somehow I quite liked messing about and landing a few kicks now and again.

A wasted licence then I think and a game I would not recommend.

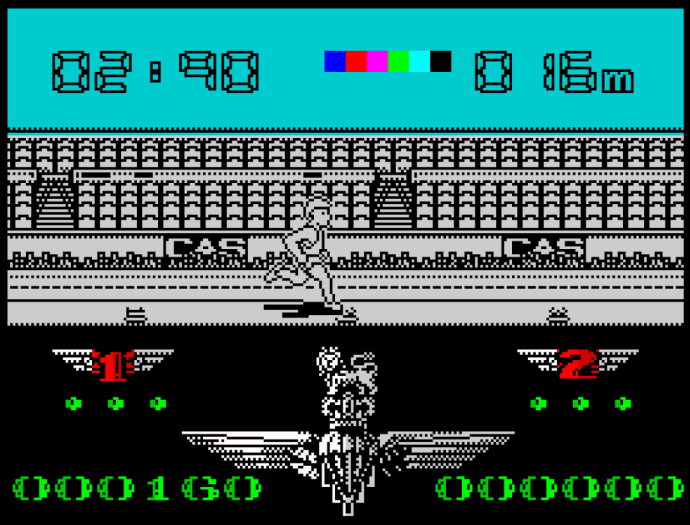
PARA ACADEMY

Publisher:	Zeppelin
Year:	1990
Price:	£2.99

Para Academy, on the inlay, sounds great. Telling the player they have to beat six disciplines to become one of the famous Green Berets. This is, however, nothing more than a Track n Field clone with decent graphics and a few different events.

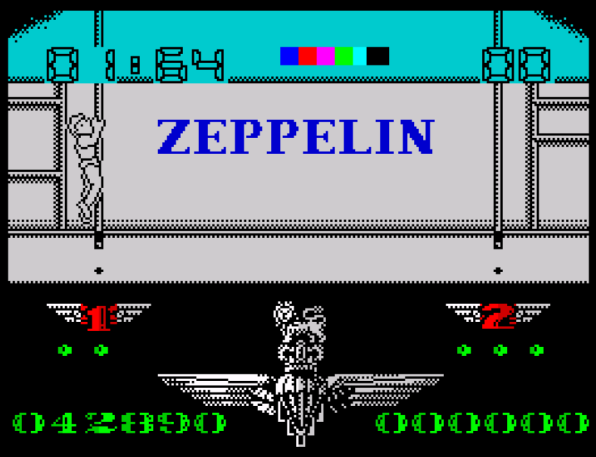
This was, it has to be remembered though, a budget release, and for that, the gameplay and graphics are very good.

Each event has a set target to aim for to allow you to get promotion and so work your way up the ranks. The first event is the 100m sprint with a target of 20 seconds and here you have to just smash the left and right keys just like the many other similar titles.



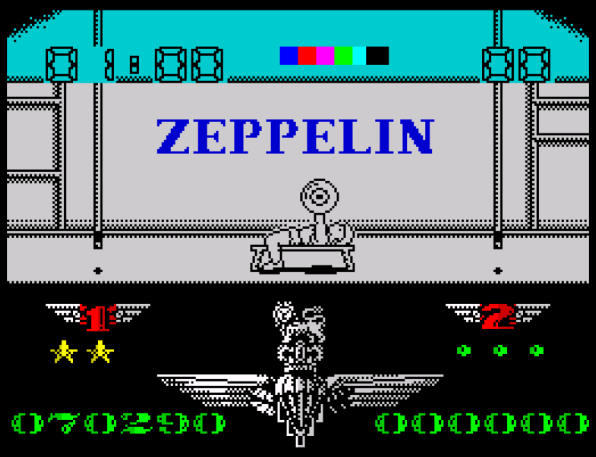
Next is the 100m freestyle swimming and again it's just more key smashing before we move onto the next event, tug of war. Yes, you've guessed it, more left/right key bashing.

A continuation of control with the weightlifting, and here we have to bash left and right until the power reaches a certain level to allow us to lift the weights. Things change though for the shooting. Here we get to use up, down and fire as well as left and right. Sadly, it's back to left and right for the rope climbing.



The game contains very little sound apart from a few beeps after each event and the odd sound when you hit a target or run between ropes. The graphics though are very well drawn and animated considering the wide variety of events.

The control is generally good but when I opted for the Kempston controls, the shooting section seemed to have the directions mixed up, meaning it is almost impossible to hit anything. Upon swapping to key control, everything worked fine.



If you like the key pounding games, then this one is worth a try.

SIR CLIVE SINCLAIR

TRIBUTE TO A LEGEND

30 July 1940 – 16 September 2021

Sir Clive Sinclair passed away on 16th September 2021. He made a massive impact on my life, and many other lives around the world.

As a teenager, Clive became interested in mathematics and computing, with an interest in making things simpler and smaller. That continued all the way through his life and career. The mould was set, the world just had to catch up.

As early as 1958 he was drawing electronic circuits and listing out components and prices and he became the editor of Practical Wireless magazine aged 18. In 1959 took up a position at Berands, a publishing company where he wrote many books on electronics.

In 1961, he set up Sinclair Radionics Ltd with a view to selling his miniature pocket radio. Taking other jobs to fund his ambition, and still writing books, his micro-amplifier soon appeared in adverts in 1962.

He was still pushing to get things cheaper and smaller and produced a series of items including, at the time, the smallest radio in the world and the X10 amplifier.

Many of the products were of interest mainly to electronics buffs or people that liked novelty items. Sinclair continued to design and sell goods moving to hi-fi amplifiers that had a wider audience.

One of the big breakthroughs was the pocket calculator in 1972. This went above and beyond what much larger and more expensive, imported models could offer. The first pocket calculator in the world. Now we are heading in a direction we are all familiar with and there was even a build-it yourself kit, just like the soon-to-arrive microcomputers.

The calculator was successful initially and paved the way for the next big thing, or should I say, small thing; a miniature television.

The Sinclair Microvision was shown at the Radio Show in 1966 but hadn't matured until much later and even then there were problems. Finally it arrived in 1977. A late delivery, something Sinclair became known for. The Microvision didn't do so well, but it wasn't the last time Clive looked at the Television market.

Next came the Sinclair digital watch, known as the Black Watch. This also came in kit form. Again there were problems that hampered sales.

Although the products were innovative, they didn't sell in the numbers needed to keep the company profitable and they began to post losses.

The black watch was scrapped. It was costing the company too much but Clive was aiming for something new. A flat screen TV. Even back then he predicted the man in the street would be able to buy a flat, 50'' TV and mount it on the wall. One of many visions he held that subsequently came true.

Sinclair, still in financial difficulty, set up a side company, Science Of Cambridge with Chris Curry leading. Their first attempt was a failed wrist calculator, made of older calculator parts. That also didn't really make money surprisingly.

Their next product, in 1977, was the Mk 14. A much more substantial, advanced calculator – leaning towards a microcomputer. In fact very similar to the Acorn System75 which was more or less a copy but included a keyboard.

As Mk14 began to sell in decent numbers, Clive regained his interest in microcomputer kits, something he was moving away from as the calculator market was not doing so well.

In 1979, Science of Cambridge was renamed Sinclair Research and Clive took a more active role. Home computers were now on the radar.

By this time however, the home computer market was starting to be noticed with the Commodore Pet and the Acorn System 75, amongst others, already available. The problem was the price, and this is where Clive had always excelled.

It didn't take long for things to happen and in January 1980 the Sinclair ZX80 was launched for less the £100. You could get it in kit form, typically Sinclair, but also pre-built. It, like many early Sinclair offerings, had its problems. The screen flickered every time your pressed a key and it had a poor membrane keyboard, to mention a few.

Compared to a Pet at the time though, with prices from £600 to £900 – Sinclair caught the eye of enthusiasts. A proper home microcomputer for less than £100. This tiny machine kick started the home micro industry – albeit slowly. People could now afford a computer, and they could write their own games.

This was quickly followed by the massively popular ZX81. Again both in kit form and pre-built. A much improved design with many of the earlier machine's bugs and problems ironed out, although it still had that membrane keyboard. Now the market started to heat up.

Companies built expansions for all kinds of activities. Printers could be attached, including Sinclair's own ZX Printer, again much cheaper and smaller than the industry behemoths like Epson and HP.

You could get sound expansions and hi-res graphics kits, input output interfaces, and much more. Small companies sprang up overnight producing a wide range of business, education and entertainment titles. Companies that are still around today.

You could expand the memory from 1k to 16k with a plug-in memory expansion, or as they were called, a RAM Pack and this opened up more potential. Arcade classics were converted to run on the 16k machine and you could play Asteroids, Space Invaders, Frogger and more at home.

Sinclair were on a roll now and their next machine was eagerly awaited. In April 1982 the ZX Spectrum was launched.

It had colour, it had 16k of RAM, it had hi-resolution graphics, it had sound and it had a keyboard - sort of.

Again it wasn't long before extra hardware arrived that could do a multitude of things. Music, sound, printing, networking, disk drives, keyboards, light pens, light guns, plotters and many more.

A 48k version soon followed, setting the standards for home computers. The games scene too exploded with thousands of games available across a wide variety of subjects from space games, adventure games, war games, strategy games, platform games – the list is endless.

It was the staple of many a playground conversation and yes, games were pirated and swapped. But it did get the UK moving forward with technology, providing an affordable computer that could do many different things, including helping with your homework - a thing Clive himself was hoping the machine would do along with business use. These were mainly ignored as the games scene took off in spectacular fashion.

If it wasn't for the ZX81 and Spectrum. We wouldn't be here doing this.

SIR CLIVE SINCLAIR

TRIBUTE TO A LEGEND

Clive's foresight, inventiveness and ability to miniaturise and reduce the price, although often fraught with delays, provided a solid base from which today's gaming and IT industry could build. Many people who work in IT or programming toady of a certain age, started on Sinclair's computers, including myself.

Sinclair continued to improve the Spectrum through the 128k model and plus model until Amstrad took over in 1986.

Sinclair didn't stop there though and started to branch out into other areas. They continued with computers as well, releasing the Sinclair QL in 1984. Aimed more at businesses, this used Sinclair's Microdrive technology for storage but failed to do well in an already Amstrad dominated market. It did however produce some interesting games, in that they were notable for things other than the game itself.

Bratacus was a game born form the Imagine crash. Some of the team broke away and wrote this game, which is, more or less, Bandersnatch, the lost Imagine mega game. It wasn't particularly good but notable because of the story. Also, Magnetic Scrolls released The Pawn on the QL first, before moving across to the 16bit machines like the Amiga and ST.

Sinclair finally got their flat screen TV out in 1983. A clever design showing what could be done with a little imagination and talent. People wondered why you would want to watch television on such a small screen back then, but look around you today - how many people are watching Youtube or TikTok on their phones?

Now we have to mention the C5. Launched in 1985. Again, people laughed at this. Who would want an electric car? Again I say look around. Clive was way ahead of his time.

Yes it was small, yes it looked comical (although I thought it looked cool) but it was their first attempt, the ZX80 of cars if you like. Sinclair planned a whole range of electric vehicles, much larger than the C5 and that looked more like real cars as we know them.

He then attempted something similar but on a smaller scale, the Zike - an electric bike in 1992. A pedal bike with a smaller 100w electric motor that drove the rear wheel. Batteries were fitted into the frame providing a small amount of power.

The idea was, sorry to say, again ahead of its time. Today London has loads of electric cycles now, but back then, people were just not ready. It was also, reportedly, terrible and almost impossible to ride due to it's tiny wheels.

We haven't even mentioned the overseas stuff like the Timex deal and the many clones around the world, or even the Wafa-scale technology he was working on. Or the mini portable the Z88, sadly, again it didn't take off as expected.

I think he will be remembered for the thing he probably thought was a small step to much larger things, the Spectrum. It took off faster and was more successful than I think he imagined. But it was probably the product that made the most impact.

Still loved today, still supported today with new games and new hardware, and still very much important in so many people's lives.

If I have one memory of Clive it was when he did an online chat on Micronet 800, Celebrity Chat, as it was called.

People typed in their question and he (or someone with him), typed back the reply. This was after the Spectrum had been sold to Amstrad and I asked him if he had any plans to come back into the home computer or gaming market.

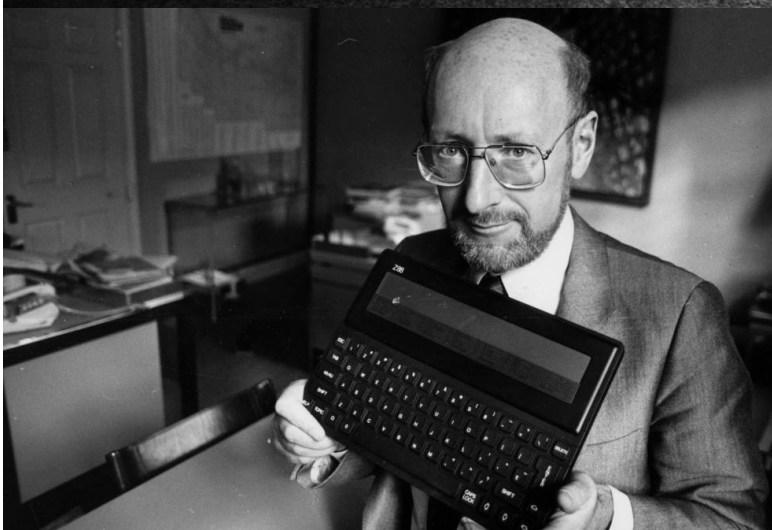
He replied "Possibly – but it would have to be a very fast 3D system."

I was so excited that he had replied!

Clive did not just changed the course of my life, he change the course of the country.

To Sir Clive, for that reply and for your years of happiness you have given me and millions of others..

THANK YOU



OLD COMPUTER SHOPS

Sadly, the decline of the local specialist computer shop is intrinsically linked to the growth of the superstore and the shift from specialist hobby to mainstream requirement.

Across the UK there were hundreds, if not thousands, of small retail shops selling only computer related goods, with shelves packed with games and hardware. Often manned by bearded 'nerds', these places are where you went for information, help and games for about every computer available.

They greeted regular visitors by name and knew what games they would like. They enquired how you got on with the last game you bought and listened to your reply. They would let you see games on tiny 14inch portable TVs or try them before you bought them. They would offer advice and tips for playing and ask for your help if they were stuck. Anyone new to the shop would be treated with patience and given all the advice they needed and this ensured a return visit.

There were no forced sales, no targets, no clueless salesmen, just good honest advice, chat and a sharing of a subject that was close to our hearts. Maybe this is another reason they only survived for a short period of time during the early 80s. They were not in it to make loads of money, they were in it because they loved computers.

The size, shape and layout of these stores were different with no corporate image to uphold, and they often felt over-stocked like a tiny Aladin's cave creating a cavalcade of imagery that was fantastic.

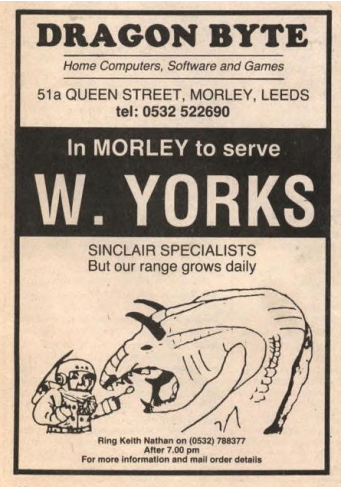
I had a few shops close to home, some larger than others and I have mentioned my favourite by name on several occasions; Dragon Byte. This tiny shop was situated at the end of a narrow run of properties on a main road next to a junction. It was located in Morley, a small town on the outskirts of Leeds, West Yorkshire.

Picture above shows Dragon Byte as it is today, Morley Mobiles.

It had a single doorway right on the corner and a single, four panelled window that was full of games and hardware. Inside was just enough room for three or four people to stand without bumping into the counter that took up nearly half the space.

Every available inch on every wall was used for displaying goods and these included RAM upgrades, joysticks, games and books. The Spectrum games took up most of the back wall so you had to lean across the counter to get a good look at them.

Stacked almost floor to ceiling, the games rack was a wonder of colourful inlays and I am sure, but would not swear to it, that they were arranged by company. The upper row of shelves that went all the way around the cluttered space held the big box games and more expensive titles such as the Level 9 adventures. I recall staring at the cardboard original of Colossal Adventure and wondering what it would be like to play.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They did sell hardware too, but I have no idea where they stored it: there seemed not enough room from the size available. In fact there was a very small space behind the shelves, but that contained a tiny sink and small kettle. The shop didn't even have a toilet. The owners had to go out and use the outside facilities of the park opposite. I bought my 16K Spectrum there, and later went back to have it upgraded internally to 48K.

This was my world from 1983 to about 1985. I visited every Friday straight from work to view the new titles and maybe pick-up some games suggested by the owners. I spent about an hour in that tiny room, once a week, chatting to other visitors, getting advice and tips on adventure games and generally surrounding myself with computer joy.

I spent a lot of money there, often £10 per week, sometimes more, and that marked the start of my game playing weekend. From there it was straight home and upstairs onto my computer.

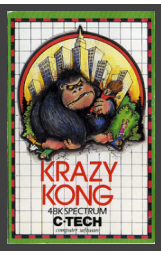
The number of games I bought from them must run into hundreds and obviously included some classics and not-so-classic titles. I bought Manic Miner from them, that was an interesting visit. I arrived to be met with a very excited owner behind the counter who seemingly had been waiting for me. He said he had a new game and that it was the best game he had seen and that he would guarantee I would like it. He even said he would refund me if I didn't enjoy it. Needless to say, I never took it back.

I also bought numerous early Ocean titles there like Kong, Moon Alert and Pogo as well as some Artic games like Gobbleman, Galaxians and Invaders.

It was in this shop I was introduced to adventure games with the suggestion that, if I wanted something more than shooting things that would challenge my brain, then I should give this a try. He handed me a copy of Adventure One by Abersoft. I took it home and was back the following week to buy Artic's Adventure A – Planet Of Death.

The first games I bought from them was Labyrinth by Axis Software and Gobbleman by Artic. Both by today's standards were terrible, and Gobbleman had a bug that caused the game to crash with an "OUT OF SCREEN" error. The replacement worked fine, but was given very little playing time.

In later months I introduced them to a few games I had bought mail order so that they could stock them, the most notable was probably Pheenix from Megadodo Software. I also warned them not to get Krazy Kong from C-Tech. My mail order version was one of the worst games I have ever played.



A warning: Never buy this!

The owners had two other shops, Heramon's Dell (not sure of spelling on this) and Last Chance (Headingley), both in different areas of Leeds. They also had their own small software publishing section that released only a few select titles. Usurper and Next War being the ones I can recall.

The other shops I visited included Thoughts and Crosses in Heckmondwike. This was a larger store selling a more varied range and eventually moving into the 16bit market. I bought quite a few Amiga games from them (one came with an unwanted virus though!). The shop had a small room at the back where you could go and play on the computers set up.

I also visited a small stall in the local Market that also doubled as a video library. They had a small glass cabinet that always held the latest releases. They never seemed to have dead stock. I bought Daley Thompson's Decathlon from there, which failed to load. They swapped it for another that also failed to load. The third one too was problematic, but use of another tape recorder sorted it out.

As time moved on, things seemed to get harder for the smaller retailers, certainly for Dragon Byte. They got fewer new releases in and their stock soon became old and un-sell-able. I remember waiting over 3 weeks after launch of Mooncresta to buy it and they never got it in despite me asking for it. I ended up going to Leeds city centre and popping into Laskeys to get it.

Laskeys was a large, unfriendly place that sold washing machines, kettles, record players and televisions. It sold a few computers but in no way specialised in them. The staff were useless at giving advice, they had no idea what was a good game or which micro would suit your personal needs. There were large-scale box-shifters interested in only profit, but they did have the latest games if you knew what you wanted.

The small dedicated shops could not really compete and slowly they vanished from the high streets. I visited less often, not because I didn't want to go there, but because they were offering fewer and fewer new titles. They ran the shop as a sort of hobby themselves, they were not interested in profit (or so it seamed), just wanting to make enough to survive.

As these shops slowly disappeared, the retail side moved into the larger stores like Boots or Virgin. Such a loss. The cold feel of the cleansed floor space, the un-interested salesmen and the total lack of knowledge about the goods they were selling made me visit only if I had no other choice.

I am sure many of you had your own favourite shops. Those little hidden-away places you loved going to. The excitement of what new games were available. It is sad that they have gone and also sad that very few pictures actually exist of them. I would love to see the shop front again, and even better, the inside. Such happy memories of a stress-free life that focuses on a small shop in my local town.

A typical large computer store. Money was the focus and not customers.

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No need to modify your ZX Spectrum!
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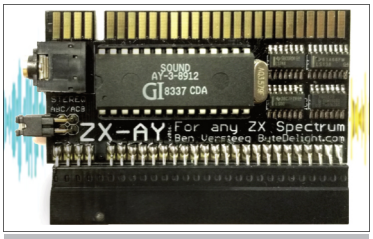

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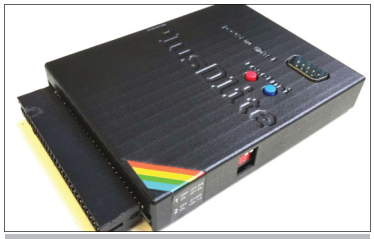
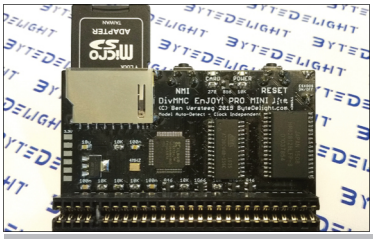
External 3-channel interface
For any ZX Spectrum
Crisp stereo sound
No Mods to your Spectrum
BEEPer throughput



PLUSDELITE

Based on the PlusD
Up to 80 track DS DD
Maxi capacity 800KB
Snapshot functionality
Integrated Kempston



DIVMMC PRO Mini Lite

All the features of the full version minus the case, joystick ports and dual SD slots.

SPECTRANET

Ethernet interface for the ZX Spectrum
Connect your Spectrum to the internet.
Developed by Dylan Smith

The Magic Roundabout

Publisher:	CRL
Year:	1984
Price:	£6.95

For those that do not remember or are simply too young to know, the Magic Roundabout was a children's television show from the late sixties to late seventies and was a stop motion production, originally from France, with an English overdub.

There was no real story, just a short series of adventures in the magic garden and near the roundabout. The show had a series of weird characters from a daisy-chewing cow called Ermintrude, to a hippy rabbit called Dylan and Dougal, the dog.

The game makes Dougal the main character on a quest to build a house out of sugar lumps. To do this he has to wander around the garden collecting sugar lumps and then take them back to the magic mushroom.

In his way are the other characters, moving around randomly, causing Dougal to lose health if he collides with them. Health is represented by a large bag of sugar which can be replenished by eating the sugar lumps instead of taking them to the mushroom.

The game area is larger than the screen and scrolls in character squares as Dougal moves around. Collecting sugar lumps must be done in a certain way, by lining them up just below his head. He can only carry three lumps at a time and can lose them in a few different and sometimes irritating ways. First if he collides with any other character, second if he collides with a large train at the top left of the map (the reason it's there is unknown), or lastly by changing direction. If he swaps from moving left to moving right, he will drop the lumps, which is very annoying.

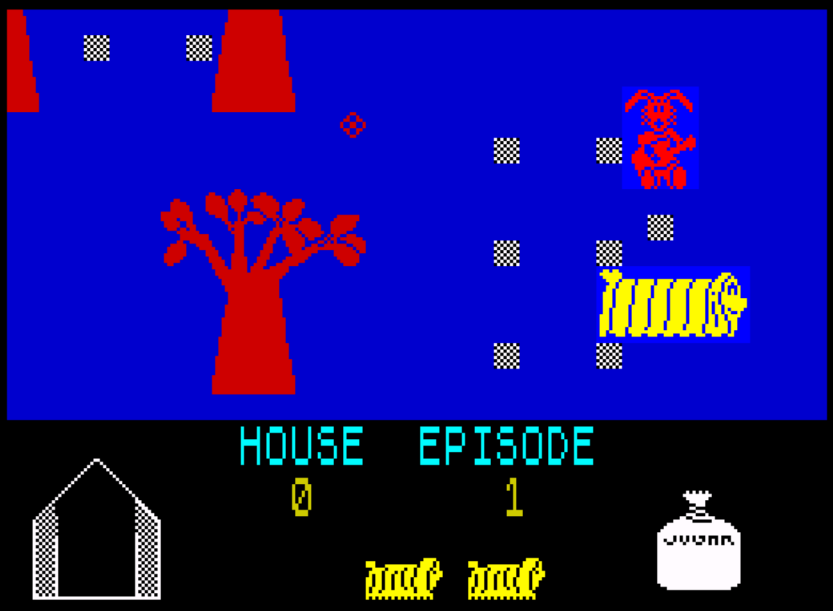
The large train at the top left of the area has a trailer that can be used to place sugar lumps on, but the reason for this is a mystery.

As Dougal drops the lumps on the mushroom, his house is slowly built in the bottom part of the screen. Once complete the game continues with the next house.

The graphics are large and recognisable, but some characters use BRIGHT, which looks terrible on today's monitors. The roundabout itself is also present but is just something else to bump into rather than being a useful or functional item.

The sound consists of just BEEPs and control is often sticky and delayed.

Overall, not a fun game at all, and frustrating in places. For younger players at the time, who enjoyed the television shows, it may have been acceptable, but I think the difficulty is too high for that generation.



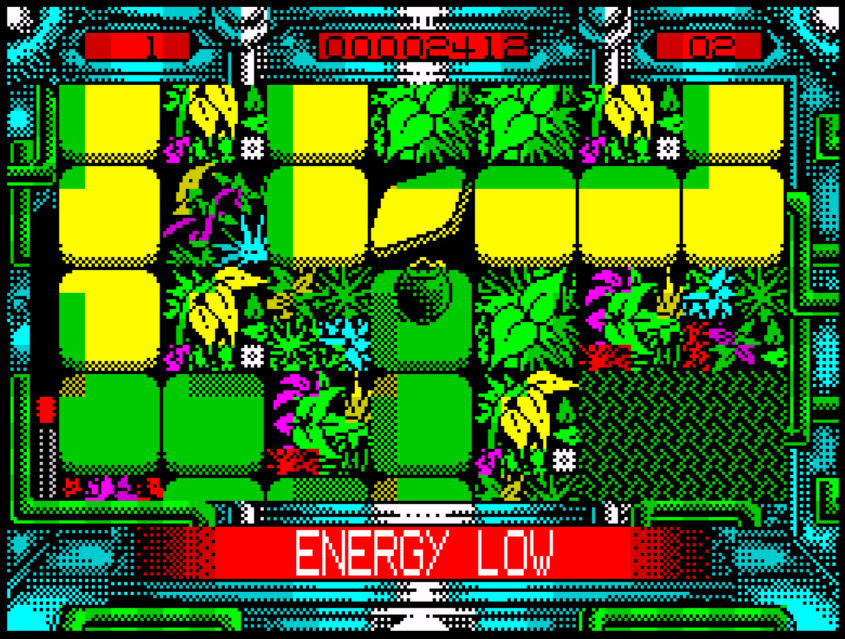
Maze Mania

Publisher:	Hewson
Year:	1989
Price:	£9.99

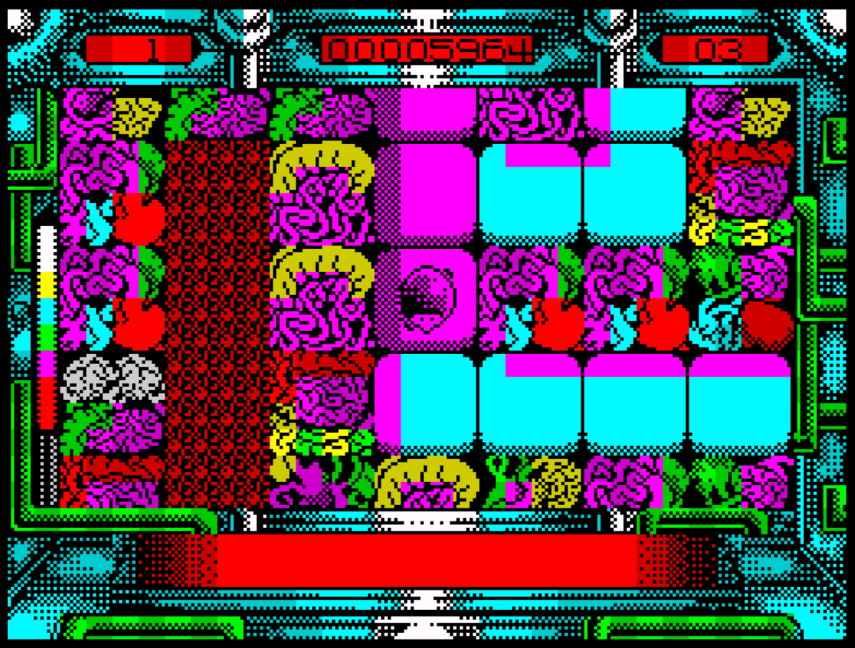
Maze Mania is a fantastic looking game with plenty of colour and challenging gameplay.

You control a hedgehog-like creature called Flippo, and he has to move around a maze changing all the floor tiles to a different colour. The action is viewed from above and the large maze scrolls as our hero moves around. The scrolling is very good with so much colour on screen and looking at it closely, I am not sure it is character-based scrolling, which is an achievement in itself.

As Flippo moves around, each tile rotates as he walks on it, which is great effect and adds that extra bit of polish to the game.

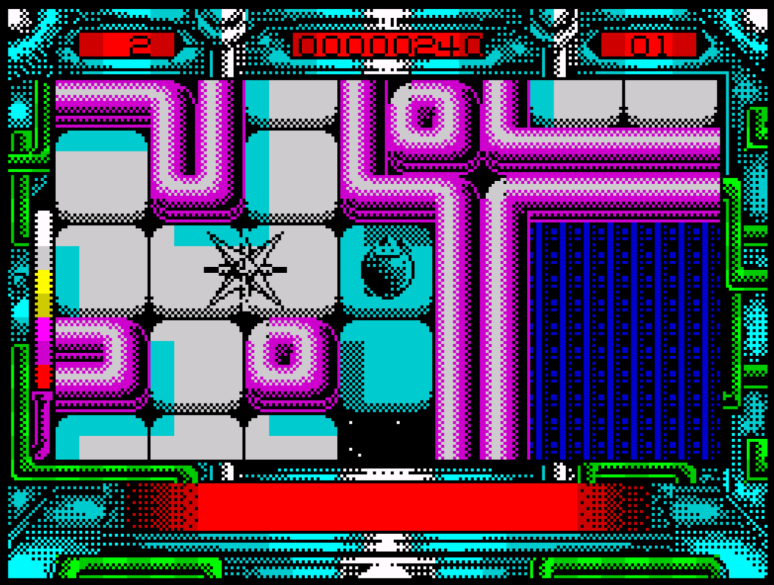


As an added challenge, some tiles can only be changed if Flippo walks on them in a certain direction and some tiles revert back if he walks over them a second time. Not only that, the maze has holes that he can fall through. Flippo has the ability to jump however so this can be used not only to jump the holes, but also to jump over the roaming enemies.



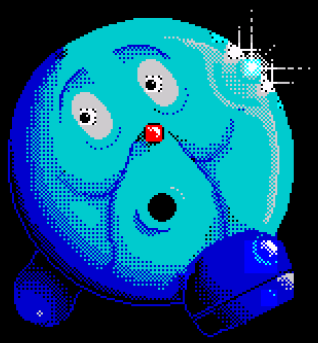
The jump has an added feature in that Flippo can change direction in mid-air and this is needed for later levels where the holes sometimes appear on corners. Flippo must then jump in the direction he is moving and change midway to land safely on the right tile.

The maze had a collection of enemies, which must be avoided. Some move around randomly and others follow fixed patterns of movement. Any collision with them will result in a loss of energy. Energy can be replenished by collecting an energy icon which can also be moving around the maze.



The maze itself wraps around with constant scrolling and you soon learn which paths lead to which areas. Once all the tiles have been changed, you get an audible alert and a block, somewhere in the maze, will appear. Moving onto this block will send Flippo to the next level.

There are 24 levels and four repeating graphic styles. It's a pity there was not more styles, but I presume the game was designed to fit into 48k.

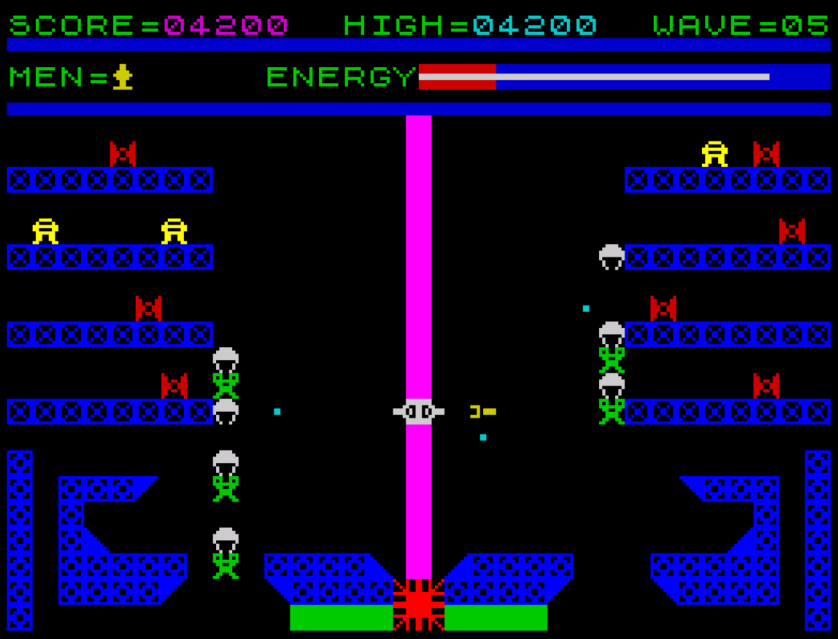


Sound is used sparingly with some nice effects and control is fine, and the whole game is great to play.

Paradroids

Publisher:	Mikro-Gen
Year:	1984
Price:	£15.95

Paradroids is described as a totally new game on the inlay however. Which, does remind me of several older arcade games, notably Cosmic Guerilla.



You have to defend the nuclear core against the hordes of aliens intent on its destruction. The aliens line up, very conveniently, on horizontal platforms, occasionally jumping off to parachute down. Strange that alien technology can allow them to travel light years to get to our planet, but they haven't managed to find a better way to get to the nuclear reactor.

As they parachute down, you can shoot them but if they land, they transform into faster moving aliens that cause all kinds of trouble for you. The other aliens on the platforms can still be shot, but to progress through the levels, you need to destroy all the parachuting or morphed aliens.

The graphics are simple and move in character squares, which actually helps this game and makes it easier to line up shots. Sound is the usual early Mikro-Gen sounds that I like so much.

Control consists of just up and down along with left or right firing. Controlling the laser base at the centre of the screen means you have to decide which aliens are the most threatening or are parachuting, and shoot accordingly.

Once transformed by landing, the aliens then begin to not only move randomly around you, but also start to fire at you.

The action is fast, just like the classic early arcade games, and it is great to play. The game is old and it doesn't do anything special, but give it a try.

PROTEK SOFTWARE

Protek were one of many companies producing joystick interfaces in the early days of the Spectrum. Back then there was a race to define the standard, which was won eventually by Kempston.

Other companies produced their own standard in the hope it would catch on, these included Fuller Electronics and Sinclair themselves.

Some companies produced interfaces that were compatible with the other popular ones, and Protek opted for this route, despite their early adverts not mentioning this important fact.

In 1983 they were advertising just a standard interface. No frills, it wasn't programmable or switchable – it was just a single joystick interface.

The Interface

The instructions are easy to understand, but then again, a joystick interface is not exactly complicated.

There is a single joystick port on the side, and around the back is a three-position switch. Position one emulates the Protek or Cursor joystick. Position two emulates the Kempston type. Position three emulates the Sinclair Interface 2 type.

Protek did change the design of the interface over time, the more recognisable one being this rounded design with yellow text.

As time moved slowly on, they changed to larger adverts selling not only the interface, but some games as well. Still no mention of the joystick standard they were using, only that it was compatible with games from companies such as Silversoft, Quicksilva and Ultimate Play The Game.

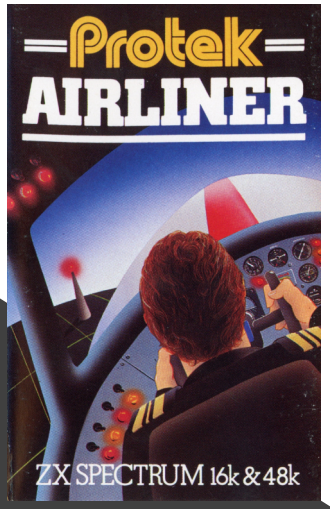
In mid-83 the advert moved to full colour, and was accompanied by a full colour opposite page advert for Hunter Killer, another Protek game. Interestingly, the tag line was "Play The Game". This was after Ultimate arrived on the scene with the same tag.

Strangely, the games shown in these early adverts were not all for the Spectrum, some were for the ZX81.

Protek produced only 6 games for the Spectrum, along with 2 for the ZX81. They also sold an acoustic modem, and a joystick.

But let's concentrate on those games.

Airliner



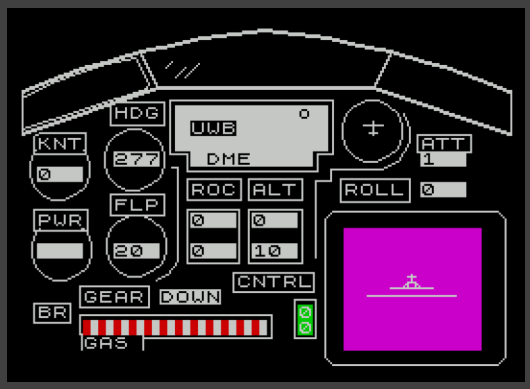
As you can imagine from the inlay and name, this is a flight simulator. What you may not know though, is that this game appeared as a type-in in Your Computer magazine in December 1982, named BA 111 simulator.

Mostly written in BASIC, with a small machine code part, Protek sold this game to the public even though it was free to type in two years previously. The instructions are comprehensive though, explaining the cockpit layout and map screen.

Onto the game then, and I have to say that I do not like flight simulation games. This one does not have an actual view out of the cockpit, just of the instrument panel, which deters me even more. I would have thought this style of simulation would only appeal to the hard-core sim fans.

There are numerous keys that operate the throttle, flaps, banking, landing gear, and the challenge is to take off and land again. Not as easy at it sounds!

As you press the various keys to gain speed and eventually take off (if you are lucky) the only indications you are doing something are the on-screen read outs and a small representation of your plane and the ground.

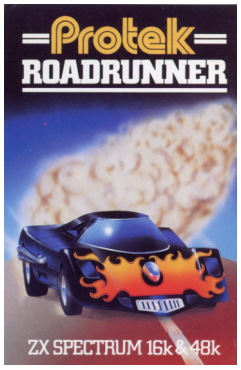


This type of game is interesting to a minor section of the gaming community. Sadly I am not one of them. Watching dials change does not excite me. Sorry folks.

Even following the instructions I failed to get the plane off the ground!

Let's move on.

Roadrunner



The inlay for this one looks really nice and suggests a racing game of some type.

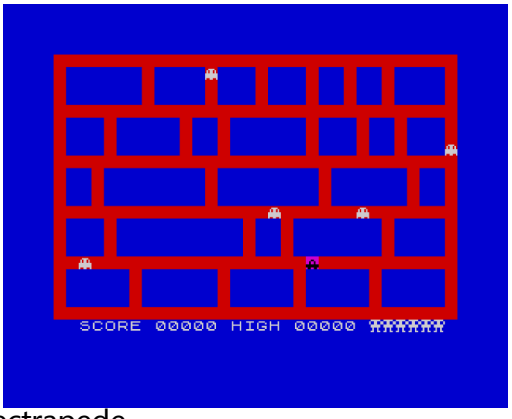
"Can you handle a turbo charged hot rod round a torturous course…" so the advert claims. Well we'll see.

Upon loading it seems to be a poor cross between Pacman and Amidar. You drive around filling in the lanes and avoiding ghosts.

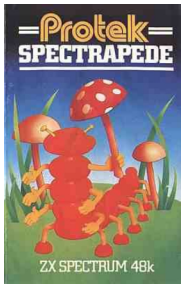
The game graphics, are clearly 8-pixel user defined graphics and move around in 8-pixel jumps. The sound is terrible and the key response is a joke.

The game quickly becomes frustrating because of this and you get better response from a BASIC type-in game.

Not original, not really a game worth buying and the best thing being the inlay.



Spectrapede



Now there are no prizes for guessing this game and the inlay does look good. Yes, it's a Centipede clone and there's trouble in the mushroom patch.

Again we have pixel graphics, but at least things don't slow down when the screen gets full. There is full control so you can move in all directions and the segments split as expected. There is even a very annoying spider.

There was also a Galaxian that appeared at one point too, firing at me. The snail is present and there is also a strange white worm. The screen can get very busy.

Sound is good, and better than previous games, using some decent machine code effects and control is a lot better too.

It's not a bad version of the arcade classic. Playable and enjoyable.

So far this is the best Protek game.

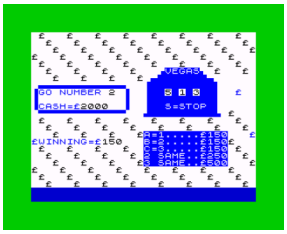
Venture

This is not a single game, it is a collection of seven BASIC games that load one after the other. I did a Patreon special about this some time ago. You start with £1000 and each game will add or take something away based on how you play.

Game 1: Racing
A duck race. Three ducks racing and you just pick which one you think will get the best random numbers, and wait until they reach the end of the screen.

That's it.. not really a game…

Game 2: Fruit Machine
We all know these. Here you have ten attempts to win more cash. This game differs though and you get three numbers and a secret combination to guess. You don't really guess it though, you just stop the numbers and hope.



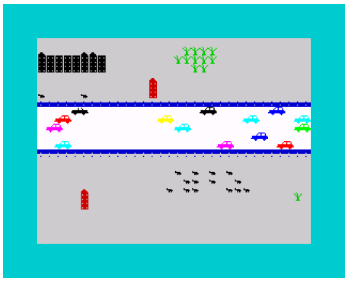
Game 3: Treasure Hunt
This game hides treasure randomly and you have to enter a grid reference to try and find it. As you guess, a little man digs. If he doesn't find anything, you will get a hint where to go next.

This can be over very quickly and one game it took me three attempts, other games it took longer.

Game 4: Mastercode
A game of logic. A bit like the board game Mastermind.

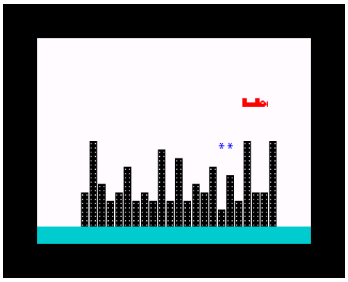
You have to guess a four digit code in the right order. I am not a fan of these games. I find them dull and end up just pressing random numbers.

Game 5: Crasher
Here you have to drive a car and crash into more than 100 other cars! A rather boring game this with dull graphics and dull sound.

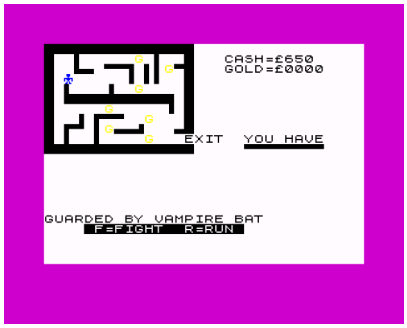


Game 6: Bomber
Really! A bomber game? A game that you can type-in from practically every magazine in the world!

Drop bombs to clear a path to land. Nothing new or different here.



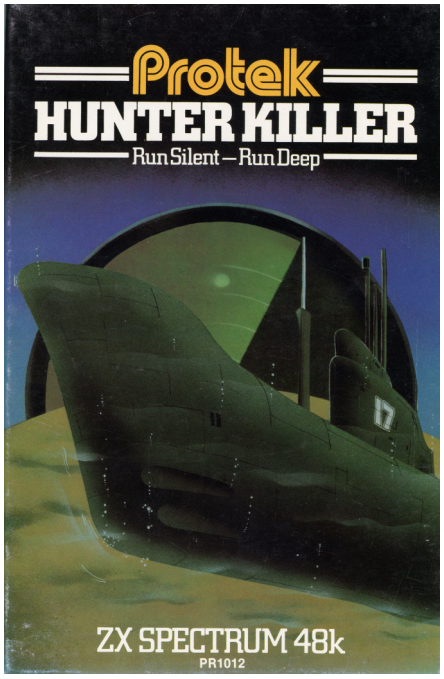
Game 7: Ad-Venture



To get the gold you have to fight monsters and navigate the maze. As you move about you will find items such as cheese, aerosol and fish! You aim for the gold but usually find a monster of some kind to fight. Using any items you have collected, you pick which one you think will kill the monster. Then a very bad fight ensues.

Once you get to the exit you are told how well you did, but you can't get out unless you have gold, so you can be stuck in here for ever. If you try to exit with no gold, you have to go back to game 5 and start again.

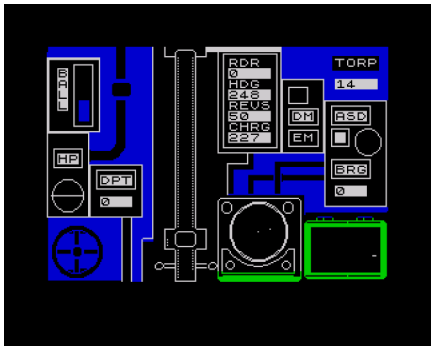
Hunter Killer



Hunter Killer was to be their killer (pun intended) game. It was heavily advertised and they went to town on the packaging. A good quality, large box and nice manual. They put out full-page advertisements. But was the game any good?

As the title suggests, this game is a submarine simulator. Using three views and numerous controls, you have to hunt down and destroy an enemy submarine. This is a kind of tactical game.

The three views you have are the main control panel, the periscope view and the chart(map).



Popping the periscope up shows nothing. To dive we have to fill the ballast tanks and at this point we get a flashing warning light because we are using the diesel engines. They cannot work underwater so we have to switch to electric. This is the sort of excitement we were hoping for. OK, maybe not.

Viewing the chart will show our position and give us the last known position of the enemy sub we have to destroy. Steering left and right, moving slowly to avoid mines and enemy destroyers, we have to make our way into the combat zone to find and destroy the sub.

It is a very slow, ponderous game with poor responses to key presses. I can't see the attraction here and the magazines were split.

The game got a score of 9 in Sinclair User, much to the annoyance of a Spectrum owner who later complained that;

"It was too slow, boring and easy to play." Continuing "It once took half an hour to reach the target."

Crash gave it 61% however.

Interesting fact 1: this game looks very much like a type-in from Your Computer, published in 1983 called U-Boat hunt and both games are by the same author. This is obviously an updated version of that early type-in.

Interesting fact 2: This game can be played in multiplayer mode using the Sinclair Interface 1. You would have to find someone else who had both the interface and the game though.

That was all of the games from the advert then and to be honest, I'm not inspired by any of them.

Protek did release another game after this, called Speculator.

This was a type of Monopoly game but with a computer twist. Instead of money you had bytes and each part of the board had some computer-related section.

Your program may crash causing you to give some bytes away or you can buy chips and charge if another player lands on them. There are a lot of other things too.

The graphics are simplistic but it's certainly a different approach to monopoly. I can see this being entertaining if there are a few of you playing.

And that's all from Protek.

In June 1984 they were still putting out full page, full colour adverts highlighting different games and in late 1984 they had a smaller advert. No games, just interfaces.

The last advert I could find was January 1985 still just advertising just a few interfaces. Maybe clearing out old stock?

It seems the company slipped away quietly like so many others.

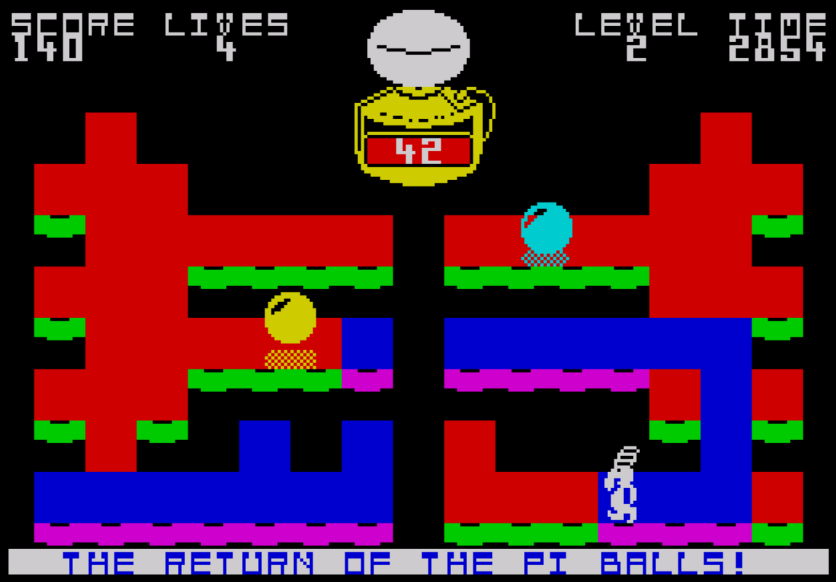
PI THERE!

Publisher:	Automata UK
Year:	1985
Price:	£-

Automata UK have put out a mixture of content ranging from the poor, badly programmed user submitted games up to the wonderful extravagant Deus Ex Machina complete with synchronised sound track. Pi There is, for me, one of their better releases and combines a simple idea with great graphics and sound plus challenging gameplay.

You control the Piman, and if you are not familiar with that character, please look him up. He is on a mission to rescue Christian Penfold and has to negotiate 20 levels of maze colouring in. That may not sound exciting, but the game throws much more at you to stop the Piman completing his task.

The screen layout is a sort of forced 3D look and as the Piman moves around in character squares, the floors change colour. Once all the floor has been changed, the next level begins.



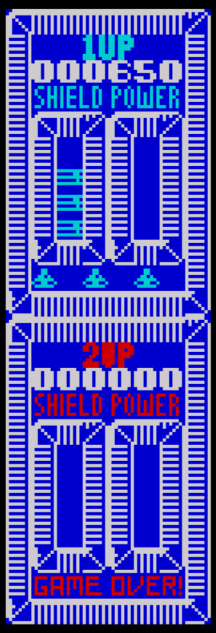
The maze floor layout contains gaps, which the Piman has to jump over, but he can't jump if the large eye at the top of the screen is open, otherwise lasers fire out and kill the poor Piman. Not only that, but there is a variety of nasties floating about that have to be avoided. Some follow the character's position and these have to be either forced into dead ends, or forced to a place that allows the Piman to complete the level.

The sound is very good with some nice effects and the control works well. The graphics look good too and apart from the Piman, they move smoothly.

It is quite tricky to complete a level until you work out how to get the nasties away from the area the Piman needs to access. It also takes a while to get used to the jump control. Once mastered though, the game is nice to play and can be quite challenging.

SUPER SPACE INVADERS

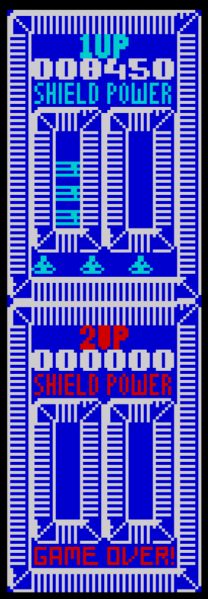
Publisher:	Domark
Year:	1991
Price:	£9.99



The game begins with a monochrome background and masked sprites and remains in this style throughout. When you first start, it feels slow and jerky but gives you a decent version of the classic Invaders game. However, there are no bunkers to hide behind and if you shoot the saucer, you get a bonus. This could be a shield or special weapon.

The graphics are tiny and, mixing that with the background, it is hard to see their bombs, and this can be frustrating. Get a decent weapon though, and you can make short work of them.

As the levels progress, the invaders do different things. The column drops down when you hit them, they expand needing more hits to destroy and in later levels fly around like Galaxians. They also change appearance, which adds variety. Sadly there are no boss levels like the arcade but the action does hot up as you take out each invader.



There are also no cattle mutilation levels on the Spectrum despite it being mentioned in the manual and in the Crash magazine review. I could not find them when playing with unlimited lives or watching the RZX playback. That is a great shame as it would have helped break up the gameplay.

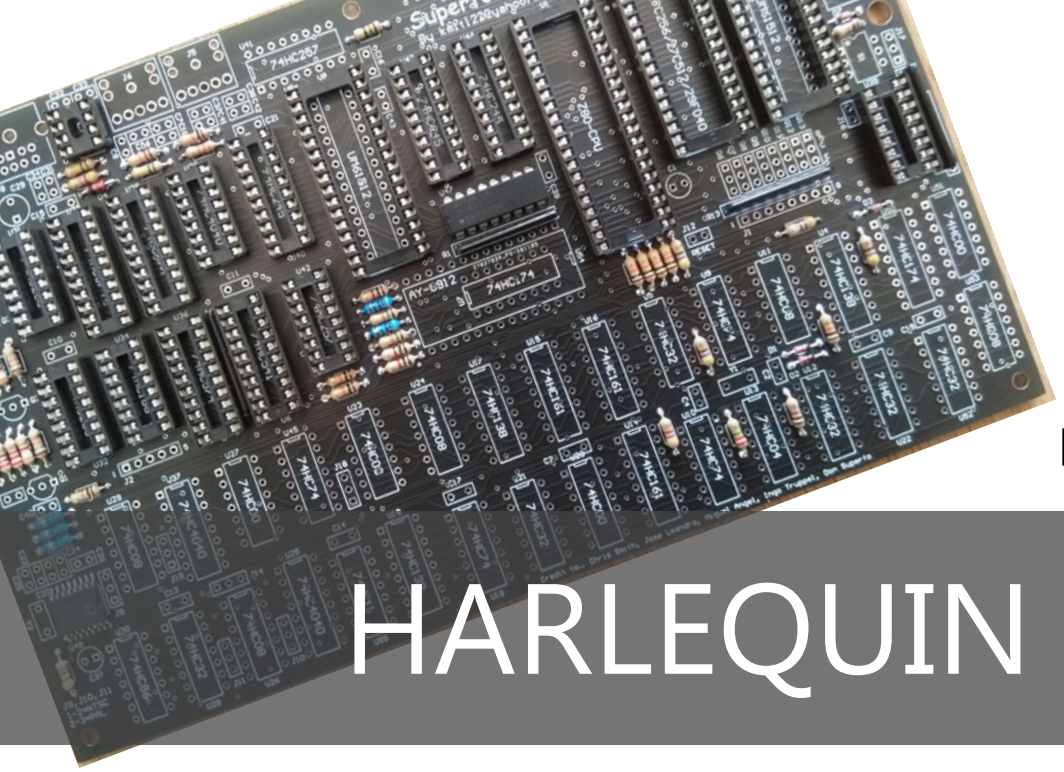
The scrolling landscape is there but, despite being an achievement with so much going on on-screen, it does make locating invaders and bombs much harder.

Super Space Invaders takes the original and well loved game and adds a load of features along with upgraded graphics. Sadly, the sound seems to have been left untouched, but who doesn't like that iconic sound anyway.

The additions include backgrounds, some scrolling, expanding invaders, different attack patterns, extra weapons and cattle mutilation! Yes you heard me right on that last one.

Sound is used well on the 128k machines, with some effects for a variety of different things and gameplay is good. I enjoyed this. It gives the appeal of the original with added elements to spice it up.

If you liked the original, or like shoot-em-ups in general, give this one a try.



Building The HARLEQUIN 128

GEORGE BECKETT TRIES HIS HAND AT BUILDING THE HARLEQUIN 128

The retro-computing scene has really blossomed in the past few years. In particular, there has been great interest in the ZX Spectrum (as evident from this magazine).

The easiest way to get into retro-gaming is via emulation. The ZX Spectrum has a good selection of emulators, which provide a very realistic reproduction of the computer, and a massive catalogue of software that has been digitised and published online, on sites such as World of Spectrum [www.worldofspectrum.org] and Spectrum Computing (https://spectrumcomputing.co.uk)

After a time, many people move on from emulation to real hardware and, for those who do not have an original Spectrum from the 1980s, online auctions, charity shops, and car-boot sales are the place to find such kit.

The most desirable of the various Spectrum models is almost certainly the ZX Spectrum+ 128k, or 'toast-rack', which is the last machine to be produced before the Sinclair line was bought by Amstrad. Technically, the toast-rack model is almost identical to the much easier to acquire ZX Spectrum +2 model, which Amstrad quickly developed in the months after the take-over. However, the distinctive aesthetics of Rick Dickinson's keyboard design ensure the 'toast-rack' is the must-have model. Sadly, it is also one of the rarer models, meaning second-hand prices on auction sites are typically out of the reach of most retro-gamers.

However, there is a third option in the form of a modern-day clone: an electronically almost identical system that is made from modern-day, readily available components. A good clone will provide a realistic experience of using a ZX Spectrum but with the advantage of modern, reliable and efficient components, plus with no risk of destroying a potentially valuable antique in a Daley Thomson Decathlon frenzy.

One of the big barriers to cloning a ZX Spectrum is the ULA chip, which sits at the heart of every Spectrum. The ULA (Uncommitted Logic Array, to give it its full name) was a custom integrated circuit designed and manufactured specifically for each model of Spectrum, intended to dramatically reduce the number of components on the main board and thus to reduce the cost. Production of ULAs for the Spectrum stopped in the early 1990s and as time has passed, their availability has dwindled to the point where a failed ULA may well be the end of life for a Spectrum.

However, options for cloning the Spectrum took a turn for the better in 2008 when Chris Smith reverse-engineered the ULA and reproduced its functionality using standard components. Chris quickly moved to produce a Spectrum clone incorporating his ULA alternative. The Harlequin, as it was named, demonstrated a faithful reproduction of the functionality of the ZX Spectrum 48k and opened a new avenue for Spectrum fans to enjoy retro-gaming.

There have been various iterations of the Harlequin design, by Chris and others, and in 2016, thanks in part to the effort of Dan 'Superfo' Dindang, the Harlequin design was extended to encapsulate the functionality of the ZX Spectrum+ 128k.

Having failed on several occasions to purchase a genuine toast-rack Spectrum, I decided to investigate the option to instead buy a Harlequin 128k.

The first thing to note about the Harlequin is that it is usually supplied in kit form, for home assembly. While it is possible to purchase fully assembled boards, these tend to be hard to find and cost a fair bit more.

Kit form was not a good start for me, as I have very limited soldering experience, based on building a couple of RC2014 boards for my Minstrel 4th. However, all the components are through-hole so, armed with a very basic soldering kit, I decided to give it a go.

I purchased my kit from Byte Delight [www.bytedelight.com]. They sell the Harlequin 128 Revision 2D board. There are other sellers and other models available, though Byte Delight's kits have a good reputation for both quality and support. I talked a little with Ben Versteeg, the owner of Byte Delight, and that convinced me I could reasonably try to build the kit.

The Harlequin 128 Revision 2D is a near-complete clone of the Spectrum+ 128k. The system runs Sinclair's 32k "Derby" ROM, which includes both the original ZX Spectrum BASIC along with the full-screen editor, RAM disk and extended command set. The system has 128KB of RAM, 3-channel sound via a General Instruments AY-3-8912, and both an RGB and composite-video output. It also has a nearly complete edge connector that supports most original Sinclair peripherals, such as a Kempston joystick, as well as modern day attachments, such as DivMMC devices.

Unfortunately, the edge connector is missing a couple of signals, including the +12-volt line. This means that the RS232 port on the ZX Interface 1 does not work—although the Microdrive and ZX Net interfaces do function correctly. Also not included are the serial (printer) port nor the keypad (later used for the light-gun)[1] .

The Harlequin 128 does have a couple of elements not including in the original toast-rack. There are connectors for an optional, on-board Kempston joystick, and the mic socket produces stereo sound from the AY-3-8912 (channel 1 is mapped to the left-hand speaker, channel 2 is mapped to the right-hand speaker, and channel 3 is centred).

The Harlequin board has the same footprint, connector locations, and mount points as the original 48k Spectrum board, which means it fits neatly into either a rubber-keyed or a Spectrum+ (48k) case. Also, the board has keyboard connectors for the standard keyboard membranes. One point to note is that, if you wish to use either the RGB display output or the joystick port, you need to cut additional holes into the case.

If you are into hobby electronics then there is an option to purchase just the circuit board, and then to source the necessary components yourself. However, I elected for the full kit, which includes the circuit board and all the discrete components except for the ROM (as I will explain below).

Alongside the Harlequin kit, you need a few other elements. First, you need to provide a ROM chip as licence restrictions mean a Spectrum ROM cannot be sold as part of the Harlequin kit. The Harlequin supports a few different ROM options. First you could source an original 128k "Derby" ROM (from a toast-rack or a +2 model). However, these are quite rare and can be expensive. Alternatively, with a small modification to the board, you can use an original Sinclair 16k BASIC ROM (as found in the 16k and 48k Spectrums). Without the Derby ROM, the full-screen editor and extended BASIC commands are not available, though the additional capabilities of the Harlequin (such as, extra memory and 3-channel sound) are still there and accessible to third-party games and programs (effectively, you run the 128k machine in what is called "USR 0" mode). A third option is to purchase a modern EPROM chip and write your own ROM. To do this, you will need a suitable EPROM programmer. EPROMs are much cheaper than original ROMs and allow you to choose different ROM configurations, including the Derby ROM or the original Spectrum ROM. You can even use the Spanish 128k ROM, which I recently discovered is quite different to the ROM sold in the UK toast-rack Spectrum [2].

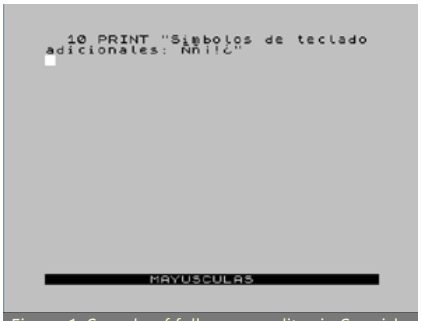
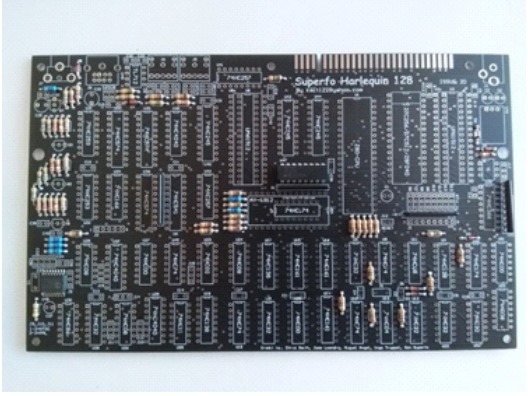


Figure 1: Sample of full-screen editor in Spanish version of Spectrum 128k.

Before I started, I spent some time watching online videos of other people building their kits and I read through the instructions several times. The instructions include lots of useful tips and highlight potential points at which you could go wrong.

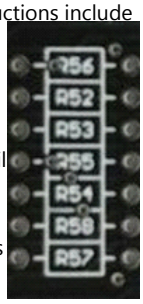


1 The serial port has been added in a later revision to the board

2 There is an interesting article about the Spanish 128k machine and its role in shaping the UK model at https://medium.com/@uto_dev/the-awakening-of-the-spectrum-128k-3732c7377788.

With this approach, the build was relatively straightforward. There were a couple of points at which I was unsure, so I stepped back and did some more research. First, there is one bank of eight resistors that looks like an IC. The serial number of the IC is not included in the instructions, though the likely candidate chip is packaged separately from the real ICs. I looked up the serial number of the component on the Internet and confirmed the description was what I expected.

The circuit board is very well labelled to indicate the location and orientation of components. Further, the instructions include a full-page layout diagram. There is a simple labelling convention with R for resistors, C for capacitors, and so on. Because the board is densely packed, a magnifying glass comes in handy. Further the instructions provide extra detail for hard-to-find mounting points. Component numbering is mostly logical, though care is needed as sometimes the order is not the obvious one. For example, near the middle of the board there is a column of seven resistors, labelled R56, R52, R53, R55, R54, R58, R57. This is where I made my first mistake, putting the resistor for R55 into the mount for R54.



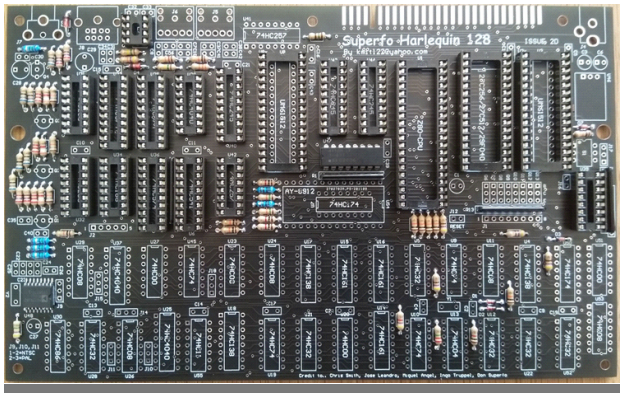
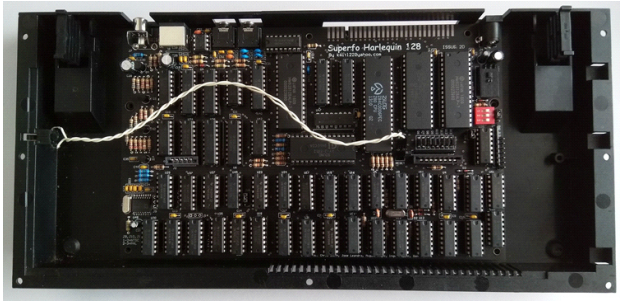


Figure 3: Around halfway through the build, midway through installing sockets.

Once the board is assembled, it is worthwhile to do a thorough visual inspection, before attempting to power it on—checking for potential dry joints, incorrectly orientated chips or bent/misaligned IC legs. I found that taking a photograph of the back of the board, with my smartphone, worked well for this, as I could zoom in to individual solder joints and easily spot any poor connections.

Figure 4 shows the assembled kit, fitted into a Spectrum+ case and ready for first test. Immediately to the left of the composite output, you can see a metal box, which contains the RGB out. Also, roughly one third of the way down the right-hand edge of the board you can see the DIP switches for selecting the active ROM bank. Finally, just below the DIP switches, you can see the (not-connected) pinouts for the Kempston joystick, which you would normally expose via a window cut in the right side of the lower-case assembly.

Having done this, I tried to power on the board though, after a



couple of seconds, there was no obvious output and – worse still – the voltage regulator got hot very quickly. This was very disappointing, especially as I had checked the board carefully and so was unsure how to start fault finding. However, after making a coffee and thinking about my next step, I took a further look at the board and realised one of the ICs was inserted the wrong way round. It seems I had not checked carefully enough after all!

I re-seated the offending chip and tried again, to be greeted by the familiar 128k opening screen. With no keyboard connected there was little more to test at this point, though I could carefully check that none of the components were getting too hot (including the voltage regulator I had spotted on my first attempt).

Filled with a mix of relief (maybe disbelief) and excitement, I quickly assembled the top of the case, and slotted in the keyboard membrane. However, here I encountered a further issue. I had not previously noticed that the keyboard clamps were missing from the case (as a USB keyboard, it had not needed these clamps). I made up some temporary clamps using small pieces of card and paperclips and, while some of the extended keys were not being detected, enough keys were working to allow me to continue with basic testing.

I used a copy of Sinclair Research's official test program, written by Ian Logan, which is available on the World of Spectrum site, and – noting that the Ear socket on the Harlequin is a stereo-type, rather than mono, 3.5mm jack – I was able to load the test program from an audio file on my PC, first time! The test program confirmed the ULA (or, at least, the replacement for the ULA) was working, the ROM and RAM were working, and sound

and colour were good. The keyboard test did not pass, though I was less worried about this as I knew I needed to sort out the clamps, plus I was able to type on the keyboard.

As the test program is for the 48k Spectrum, it does not test the extended memory nor the full capabilities of the AY-3-8912. Thankfully, another test program, written by US Gold, helped with that.

Finally, I tested the edge connector, plugging in a DivMMC Future interface. However, this did not work as expected. When I powered up the Harlequin, I just got a corrupted screen display. If I disabled the DivMMC (by ejecting the SD card), the Kempston joystick element worked, so it was not completely failing. However, then I remembered a note in the Harlequin instructions about using DivMMC with the multi-bank EPROM. Sure enough, the instructions noted the need to duplicate the target 32KB ROM into both the lower and upper half of the 64k bank. For some reason, the DivMMC addresses the top 32KB of a ROM bank rather than the bottom 32KB. With the ROM reprogrammed, the DivMMC began to work as expected, which meant more important soak testing.

As I write this, I am several weeks on from completing the build. I was able to source some replacement keyboard clamps from Retroleum [https://www.retroleum.co.uk/keyboard-parts-spectrum] and, while I discovered one of the mounting points for the clamps was broken and unusable, I have now been able to properly clamp the membrane and enjoy the extended function keys on the ZX Spectrum+ keyboard. I also connected the reset switch on the Spectrum+ keyboard (something not explained in the Harlequin instructions, but very easy to do). Finally, I decided to buy a new (regulated) power supply and put my long-serving original Sinclair power supply back into retirement. Apparently, modern power supplies provide a cleaner, more stable voltage, which improves component life and reduces noise on the composite output.

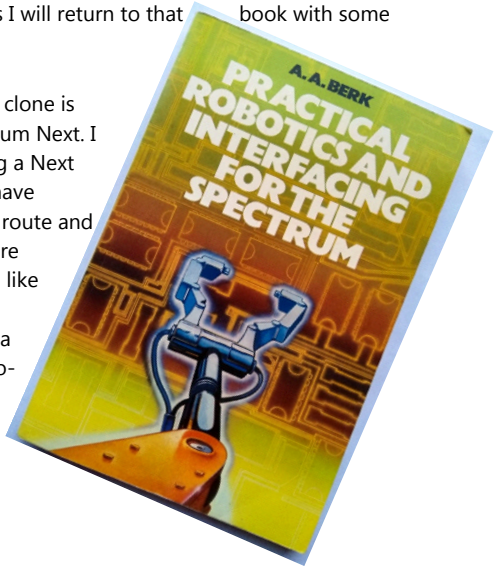
I have not (yet) tried the RGB output, as to do so, I need to cut an extra window into the back of the case (and I also need to buy a suitable cable), nor have I added an internal joystick interface (I have one on my DivMMC, anyway). I see, on the Internet, a design for a 3D-printed (non-functional, of course) heatsink, which I might add to make the case look toast-rack-like. Also, I have plugged in my ZX Interface 1 and Microdrive and confirmed they both work (except, as noted above, for RS232).

In the end, I am not sure it was much cheaper to build the Harlequin than it would have been to buy a toast-rack machine. For me, it was a little cheaper, as I already had a donor case, an EPROM programmer, and most of the necessary cables. However, in addition to the actual Harlequin kit, I did end up buying a new membrane, a 512KB EPROM chip, some keyboard clamps, and a power supply.

Having assembled the Harlequin myself and having navigated a few problems, I feel pretty confident to use the system on a day-to-day basis, whereas I would have probably been nervous about damaging a real toast-rack 128k.

I chose to build the kit (instead of sourcing a pre-built kit) in part to save some money. However, in retrospect, I think building the kit was an important part of the experience. From speaking to several other Harlequin owners, it seems this is a common outcome. There is a definite moment of pride and exhilaration when the Harlequin powers on successfully for the first time. I suspect it is a similar feeling to what home-computing enthusiasts in the early 1980s would have felt when they built their ZX80 or ZX81 boards.

Having built the Harlequin 128k, I feel empowered to keep going. I have owned a book about ZX Spectrum robotics for nearly 40 years and have never done anything other than read the projects. However, now, perhaps I will return to that book with some more practical aims.



Of course, the ultimate clone is probably the ZX Spectrum Next. I have considered buying a Next several times, though have decided not to go that route and instead to focus on more home-grown machines like the Minstrel and the Harlequin, opening up a whole new area of retro-computing.

CARNIVAL

Publisher:	Eclipse
Year:	1984
Price:	£6.45

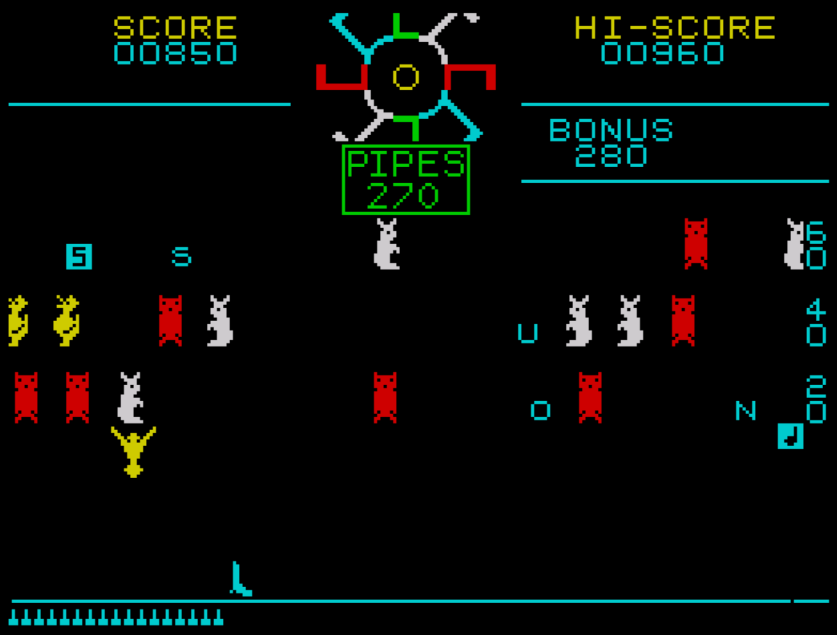
Carnival was released into the arcades by Sega in 1980.

Being an early game, it is a simple affair, which tries to replicate those old fairground games where you had to shoot various targets with broken air guns. There are additional elements too, but let's have a look at the Spectrum version.

There were very few versions of this for the Speccy, the only other one I can think of was Quackers by Rabbit Software.

Carnival was released to Sinclair users by Eclipse Software in 1984 and I do like the cover inlay. It boasts the chance to win a Grapad. However, this must have been a separate piece of paper, as there is nothing on the inlay about it.

The screen mimics the arcade layout, but is wider due to the Spectrum's resolution. At the top there are rotating pipes, under those are three rows of moving targets. You move your rifle left and right and shoot being mindful of the limited bullets you have, displayed beneath the gun. These can be replenished though by shooting the boxes with numbers on.

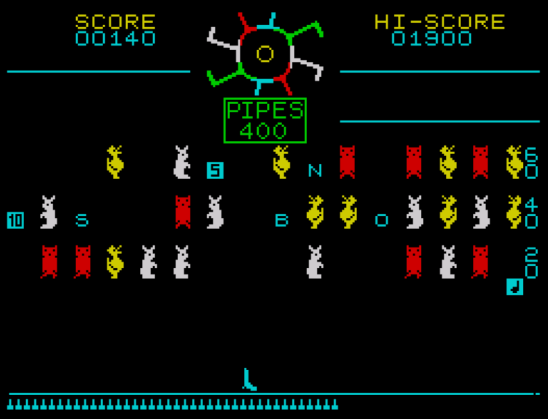


Every now and again, a duck will fly down and these have to be shot before they reach the bottom, or they will start eating your bullets. You can get extra points for shooting the letters that spell BONUS – but you have to hit them in the right order.

There is music playing while you play, but this can be turned off if it gets annoying, which it may do after ten minutes or so. Sound overall is a bit sparse to be honest, with just a sound when you hit something or the duck eats your bullets.

The graphics are close to the arcade game, so no complaints there really, and the gameplay is the same too, giving a nice experience if you remember the arcade version.

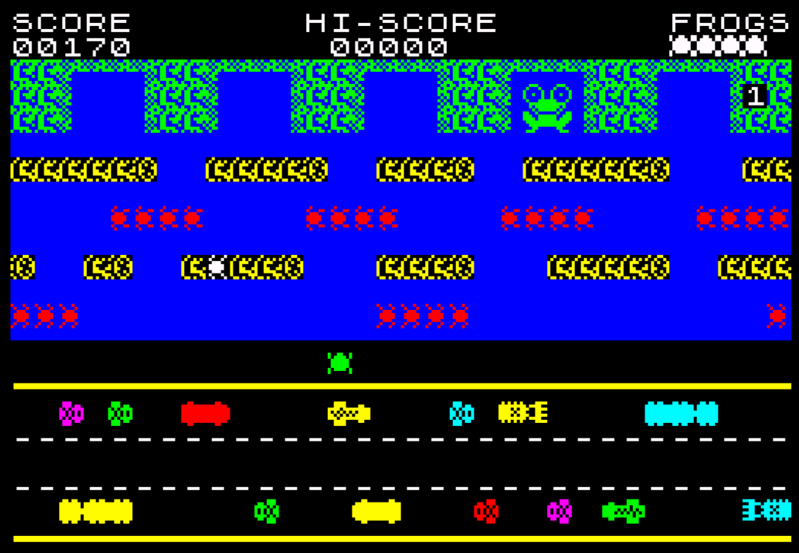
Once you run out of bullets, the game ends so it's all about accuracy, which does take practice.



A nice little arcade clone then. Fun to play, but because it's like the arcade game, it doesn't really break any boundaries or have any outstanding features. It's just a good version of an average arcade game.

Froggy & 'Z' MAN

Publisher:	DJL Software
Year:	1983
Price:	£5.95



This 16k compilation features two classic arcade game clones from an underestimated company, DJL.

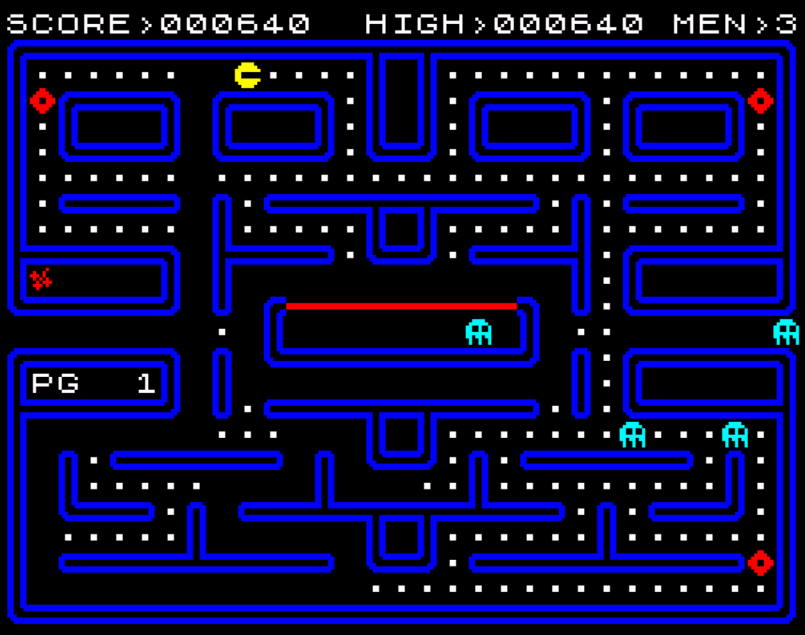
Froggy, as you would guess, is a version of Frogger, and not a bad version at all.

There is a nice little tune, which starts the game off and the screen layout and graphics mimic the arcade. There are three lanes of cars and lorries and a river full of logs and turtles.

There are bugs on the logs to catch for extra points and the turtles that dive (a feature opften missed from Spectrum versions).

Sound is used well with two tunes and although the graphics move in character squares, they look good and represent the arcade machine well.

I would presume you all know Frogger and how to play it, so no point in covering that. I played this for a while and it is a good challenging version.



Z-Man is interesting, and obviously a Pacman clone. After it was released Atari came knocking at the author's door. But because it was too close to Pacman (almost identical), and a very good version, they took the game on and with a few small changes, released it as the official version on the Atarisoft label.

The graphics are good and sound is excellent featuring all the Pacman effects and music. Gameplay is great and plays like the arcade.

This then is probably the best version of Pacman on the Spectrum apart from the official one, but that's the same game anyway.

Control is crisp and everything just feels right. A great game then. Pacman fans can delight in this wonderful version.

Publisher:	Matt Jackson
Year:	2019
Price:	£0

Astro Blaster was a very early arcade game released in 1981 and there have been a few attempts to get this game across onto the Spectrum. In 2019, Matt Jackson created the most accurate version, which is brilliant to play.

When I first played this game the first thought was wow! The game looks, plays and feels like the arcade version. The ship looks the same, the aliens look the same and the gameplay is spot on.

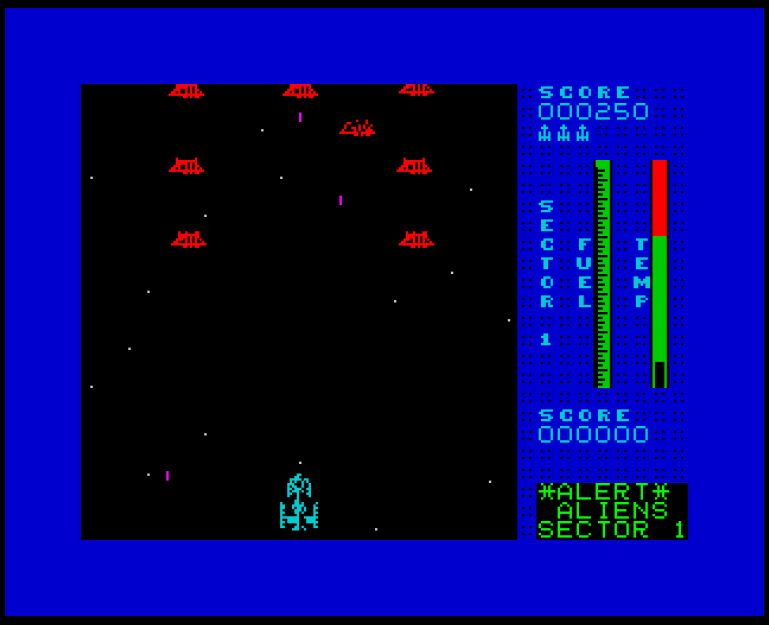
You have to destroy the waves of aliens, no surprise there, and at the same time keep an eye on the heat of your laser. If it gets too hot it will stop, so controlled attack is the best course.

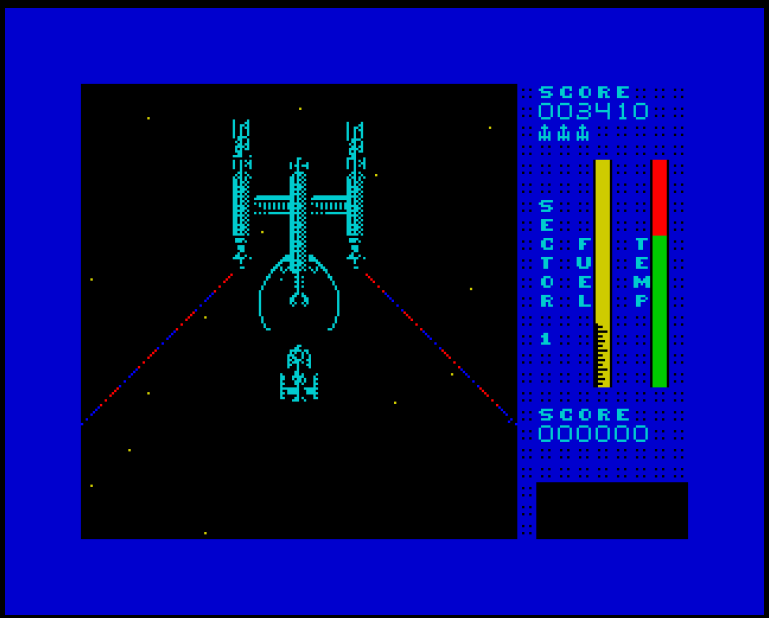
There is also a fuel limit, which gets replenished every few levels.

The aliens appear in different formations and have different movement patterns, dropping bombs on you as they swoop about. The sound is good on 128k machines, with some great effects.

This is an excellent version of the old shooter and I really enjoyed playing this. There is not too much you can write about a simple arcade conversion other than, brilliant!

You don't need in-depth stories, you don't need a load of different keys, just a great game.





TARDIGRADE

Publisher:	Dave hughes
Year:	2021
Price:	£free

Tardigrade is a strange game with a very different and sometimes infuriating control mechanism. That's not to say the game is bad, far from it, just that it takes a long time to get your brain around how the control system works.

The idea is to collect all of the sweets on each level, get to the exit and move on. This may sound simple, but the whole thing is made difficult by the controls.

The Tardigrade is represented by a circle and is controlled via a rotate and move mechanic. The angle of rotation is shown as a small dot on the outer edge, and this is the direction it will travel if you press the move key. The game also has gravity, so some screens work in a similar way to Thrust in that you have to constantly stop yourself from falling by stabbing the move key.

If you hit a wall the direction of travel is reversed so you bounce off. This is tricky to work with and makes the game challenging.

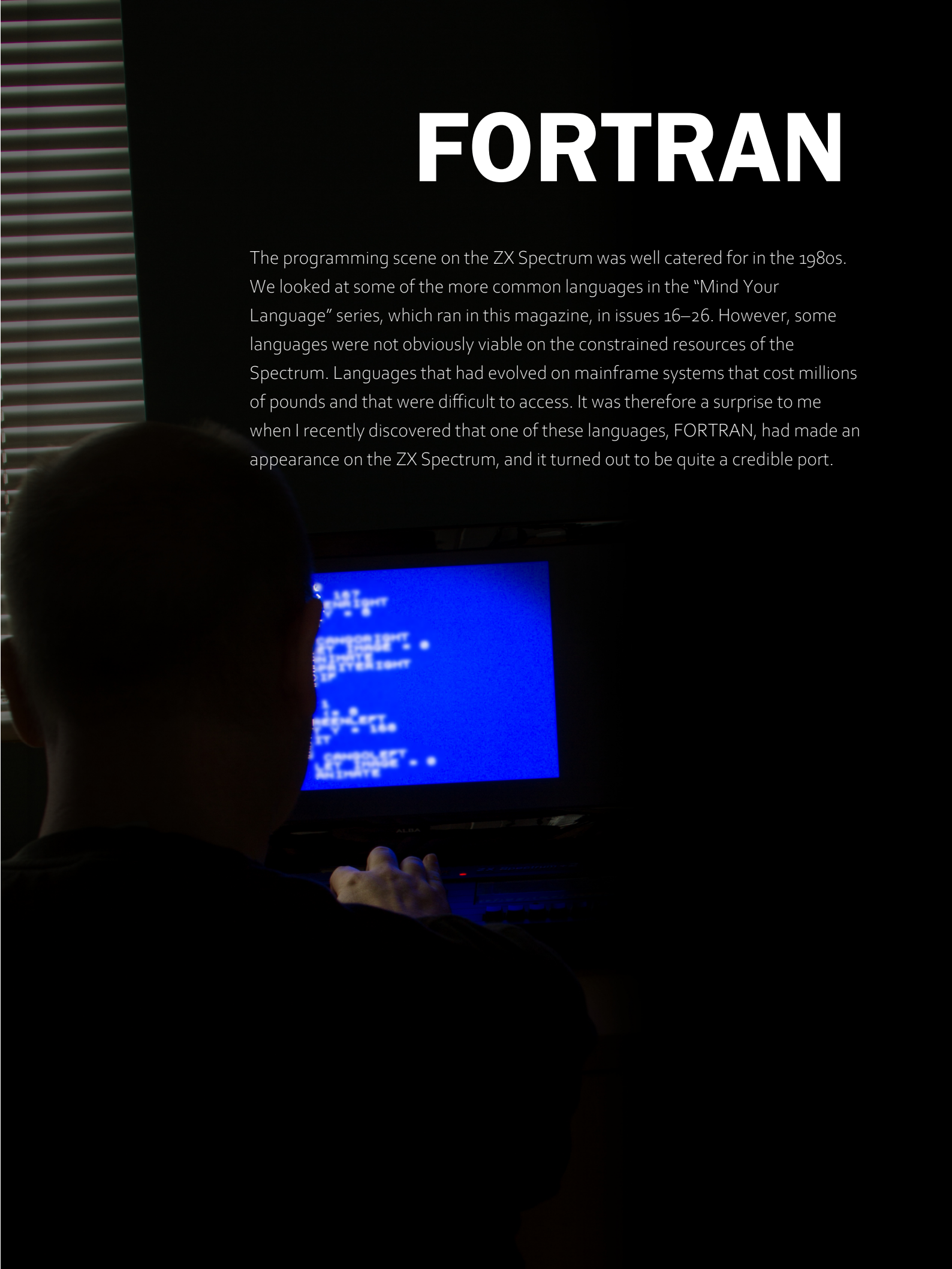
The graphics range from basic maze style blocks to large well-drawn sprites, and the sound suits the game well.

What is impressive though, is that this is a 16k game.

If you like Thrust style controls, then give this a try.

FORTRAN

The programming scene on the ZX Spectrum was well catered for in the 1980s. We looked at some of the more common languages in the "Mind Your Language" series, which ran in this magazine, in issues 16–26. However, some languages were not obviously viable on the constrained resources of the Spectrum. Languages that had evolved on mainframe systems that cost millions of pounds and that were difficult to access. It was therefore a surprise to me when I recently discovered that one of these languages, FORTRAN, had made an appearance on the ZX Spectrum, and it turned out to be quite a credible port.



FORTRAN ON THE ZX SPECTRUM

Mike Croucher, from the Numerical Algorithms Group, posted a tweet to his many followers, having discovered the existence of a Spectrum FORTRAN compiler when reading the Crash Magazine online archive http://www.crashonline.org.uk/45/tips.htm. Sadly, the compiler, written by Mira Software, was listed on the World Of Spectrum as "Missing In Action". This looked to be where the trail went cold, until one of Mike's followers replied to say they thought they had a copy in their loft. Indeed they did and, better still, they were able to recover a full version of the compiler and supporting software from the tape and then post it online (https://gitlab.com/b-rowlingson/mirafortran).

When I am not messing around with old computers, in my day job, I work in scientific computing. While BASIC, FORTH, and Logo are more akin to microcomputers, established languages like C, C++, and FORTRAN are at the mainstay of scientific computing – even today, many of the most important supercomputer-scale simulations are written in FORTRAN, including software for weather forecasting, material modelling, and engineering. This is quite remarkable, when you realise this software is using a language that was introduced more than 50 years ago.

FORTRAN, which is an abbreviation of FORmula TRANslation, is a language developed by IBM in the 1960s, intended to make it easier to write more sophisticated programs for a new mainframe computers that they launched at the time called the IBM 704. FORTRAN became an incredibly popular language for a whole range of serious applications—mainly science-based—because of its powerful capabilities for handling calculations and because of the speed of the software that was produced. FORTRAN is a compiled language, which means that before a program can be run, it needs to be translated into machine code. This is different to a language like BASIC, for which an interpreter reads and translates the lines of the program while it is running. It is generally easier to develop and debug a program written in an interpreted language, which is why it is the method chosen for teaching languages like BASIC and LOGO. However, interpreted languages are usually a lot slower than compiled languages.

Mira FORTRAN, for the ZX Spectrum, is based on the contemporary standard at the time, which was FORTRAN 77. It implements a variant called FORTRAN 77S, supporting a subset of the standard implementation, more realistic for use on a microcomputer.

Figure 1: Mira FORTRAN cassette inlay (from https://gitlab.com/b-rowlingson/mirafortran).

FORTRAN 77S is designed to allow a viable compiler to fit into the limited memory of a micro: it does not include some of the more resource-hungry elements of FORTRAN 77 nor some of the less commonly used features. For example, common FORTRAN data types, including integers, real (floating-point), characters, and logical types are supported, whereas complex numbers and double-precision floating-point numbers are not.

FORTRAN 77 is packaged with a large library of (intrinsic) functions that would be difficult to fit into the constrained memory on a Spectrum so, again, FORTRAN 77S only includes the most common of those functions. However, despite these apparent limitations, the implementation is complete enough to write genuinely useful software.

Mira FORTRAN is provided on a cassette consisting of two parts. The first part is a source-code editor in which you can develop your program. FORTRAN source code was originally designed for 80-column punch cards and FORTRAN 77S still has some of that legacy encoded into its syntax. Lines are limited to eighty characters and the first six characters are reserved for labels (or continuation marks). Because the Spectrum display is only 32 characters wide, FORTRAN lines usually wrap around. Even so, as FORTRAN only allows one command per line, program lines generally fit okay on the screen.

The Mira FORTRAN editor is similar to the (48k) Spectrum's BASIC editor. Lines are entered into an input buffer at the bottom of the screen, and then slotted into the program at the current line, when you press Enter. You can move through the existing lines of code using keys '6' and '7', and recall a line into the input buffer for editing, by pressing '1'. Something not provided in the Spectrum's BASIC editor is the ability to select and move (or delete) blocks of code (sadly, it is not possible to copy lines, which is a slightly frustrating oversight that was corrected in later Mira products).

```
      K=MOD(Y,100)              14
      T=Z(D,M,K,J)              15
      WRITE (*,910) T           16
900   FORMAT (I2, I2, I4)       17
910   FORMAT ('DAY IS ',I2)
                                18
      END                       19
      INTEGER FUNCTION Z(Q,M,K,J
)                               20
      INTEGER Q,M,K,J           21
      Z=5*K/4+21*J/4            22
      Z=Z+13*(M+1)/5+Q          23
      Z=MOD(Z,7)                24
      RETURN                    25
>      END                      26


Press required key
```

For each new line you enter, Mira FORTRAN performs basic syntax checking, and raises an error if you type something it does not understand. Once you have entered a program, you then need to save it to tape. This is because the source code (the program as you typed it) will be lost when you compile it. Mira FORTRAN automatically makes you verify your source code as part of the Save operation.

Once saved, you can compile the program. This involves loading the second part of the compiler from tape and, all going well, after the compiler is finished, Mira FORTRAN will produce some output similar to Figure 2.

```
CLEAR 59879
 SAVE 59914
LEN 5454
 REM 59914
```

Figure 2: Example output from a successful compilation step.

This screen indicates the compilation has succeeded and provides the information you need to use your new FORTRAN program from BASIC (for example, the start and length of the machine code, the maximum possible value for RAMTOP, and how to pass values back and forward between BASIC and your FORTRAN program).

Pressing any key will reset your computer. However, your compiled FORTRAN code block is still in memory (above RAMTOP) and can be saved as a conventional code block. For the example above, you would save using:

```
SAVE "myfort.bin" CODE 59914,5454
```

—and then to reload it later, you could type:

```
CLEAR 59879
LOAD "myfort.bin" CODE
```

To run your program, you call the machine code routine at 63,500, with USR 63500. If your program does not work as you expect (that is, you have some bugs) you need to reload the first part of Mira FORTRAN and reload your source file, before you can set about trying to fix it. This is where Mira FORTRAN is let down. It is likely that developing and debugging a long program would be quite frustrating, due to the significant need to load from and save to tape. In 2021, if you are using an emulator, the limitation is much less of a problem. However, I suspect that, in the 1980s, it would mean that only smaller programs and functions would have been written using the compiler.

This is an application crying out for the ZX Microdrive. Having the compiler and your in-development program on a Microdrive cartridge would have been a much more pleasant experience. Mira Software realised this and later compilers that they published (for Pascal and Modula-2) included full support for developing using the ZX Microdrive. Sadly, they never updated their FORTRAN compiler to do the same.

FORTRAN is about number crunching. It is not well-suited to writing computer games. Therefore, following on from the Mind Your Language series, I decided to try porting Zeller's Congruence rather than the Rabbit Run game.

Writing the program was simple and I quickly got used to the Mira FORTRAN source-code editor, which is about as easy to use as the BASIC editor. My implementation of Zeller's Congruence is reproduced below.

My FORTRAN77 is a little rusty, so others might write a better program. However, the above source seems to work and the streamlined FORTRAN 77S had everything I needed for this simple program.

If you are familiar with FORTRAN 77, then you will know that its input and output routines are quite fussy. This remains the case on the ZX Spectrum. Handling text is tricky and even numbers needs to be entered with a precise format. The program above will accept dates in one of two formats. The easiest way to enter a date is one number at a time. So, to enter 23rd April 1982, you would type '23', <Enter>, '4', <Enter>, '1982', <Enter>. Alternative, you could type '23041982', <Enter>. Almost anything else would result in an input error. Outputting text is also difficult. For ease, this version outputs the day as a number that you translate in your head: 0 is Saturday, 1 is Sunday, and so on.

```
C -------------------
C ZELLER'S CONGRUENCE
C -------------------

PROGRAM ZELLER
         INTEGER D, M, Y
         INTEGER J, K, T
C READ IN DATE TO COMPUTE
         READ (*,900) D, M, Y
C JAN AND FEB TREATED AS PREV YEAR
         IF M .LT. 3 THEN
            Y=Y-1
            M=M+1
         ENDIF
C APPLY ZELLER'S CONGRUENCE
         J=Y/100
         K=MOD(Y,100)
         T=Z(D,M,K,J)
         WRITE (*,910) T
900      FORMAT (I2, I2, I4)
910      FORMAT ('DAY IS', I2)
         END
C
         INTEGER FUNCTION Z(Q,M,K,J)
         INTEGER Q,M,K,J
C
         Z=5*K/4+21*J/4
         Z=Z+13*(M+1)/5+Q
         Z=MOD(Z,7)
         RETURN
         END
```

A much easier option is to write a short BASIC wrapper program to handle the input and output and keep FORTRAN for the computational kernel, as seen top right.

Global variables (ones that can be accessed throughout a program) are implemented in FORTRAN as Common Blocks. There use is generally discouraged, as it can lead to poor programming practice. However, to share data between BASIC and FORTRAN, a Common Block is very useful. Mira FORTRAN uses the blank Common Block (one with no name) to share data between BASIC and FORTRAN. If you replace the READ command in my original Zeller program with a common-block declaration, like so:

```
COMMON //D,M,Y
```

—then you will be able to use it with the BASIC wrapper above, passing the values for date, month, and year into the program, as two byte variables. The start of the blank Common Block is noted in the output from a compilation run (it is the number after REM).

```
10 REM Zeller's Congruence
20 INPUT "Date is (dd/mm/yyyy)"; d$
30 LET d=VAL d$(1 TO 2)
40 LET m=VAL d$(4 TO 5)
50 LET y=VAL d$(7 TO 10)
60 LET a=59938: REM Start of COMMON block
100 POKE a,d
110 POKE a+1,0
120 POKE a+2,m
130 POKE a+3,0
140 POKE a+4,y-256*INT (y/256)
150 POKE a+5,INT (y/256)
160 LET day=USR 63500
200 PRINT "Day is: ", day
210 PRINT "Another date? (Y/N)"
220 LET i$=INKEY$
230 IF i$="" THEN GO TO 220
240 IF i$="y" OR i$="Y" THEN GO TO 10
250 STOP
900 CLEAR 59909
910 LOAD "zeller.bin" CODE 59944
920 GO TO 10
```

In the above case, the compiler located the common block at address 59,938. You can equally well use the Common Block to pass data back to BASIC, in the obvious way.

Mira FORTRAN is an unusual program to find on the ZX Spectrum. Mira Software also produced Pascal and Modula-2 compilers, for the ZX Spectrum, along with an astronomy program called Skyview, which makes me think they were aiming at the student market. I could imagine an engineering or maths student, in the 1980s, finding a FORTRAN compiler that they could use with their home micro very useful, as a complement to the limited time they would have available on a University computing service.

The sparse information about Mira Software and their products suggests they were not very successful, which is disappointing. It is always interesting to see different application areas for the ZX Spectrum. Mira Software did a good job of taking a mainframe language and packaging it up in a useable way for the ZX Spectrum. It is a shame, they did not include Microdrive support in this compiler, since similar support in their later products makes them much easier to use. If you have a background in computational science, you may enjoy spending a couple of hours writing some FORTRAN 77 and reminiscing about fussy FORMAT statements and the potential horror of the EQUIVALENCE statement. I shall keep my eye on auction sites, in case a copy materialises, though I suspect I will be waiting for some time.

Article by George Beckett

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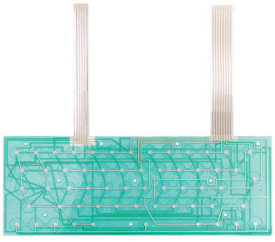

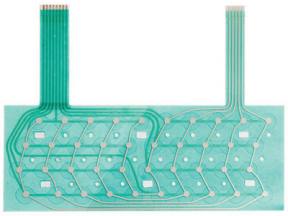

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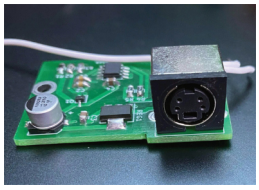

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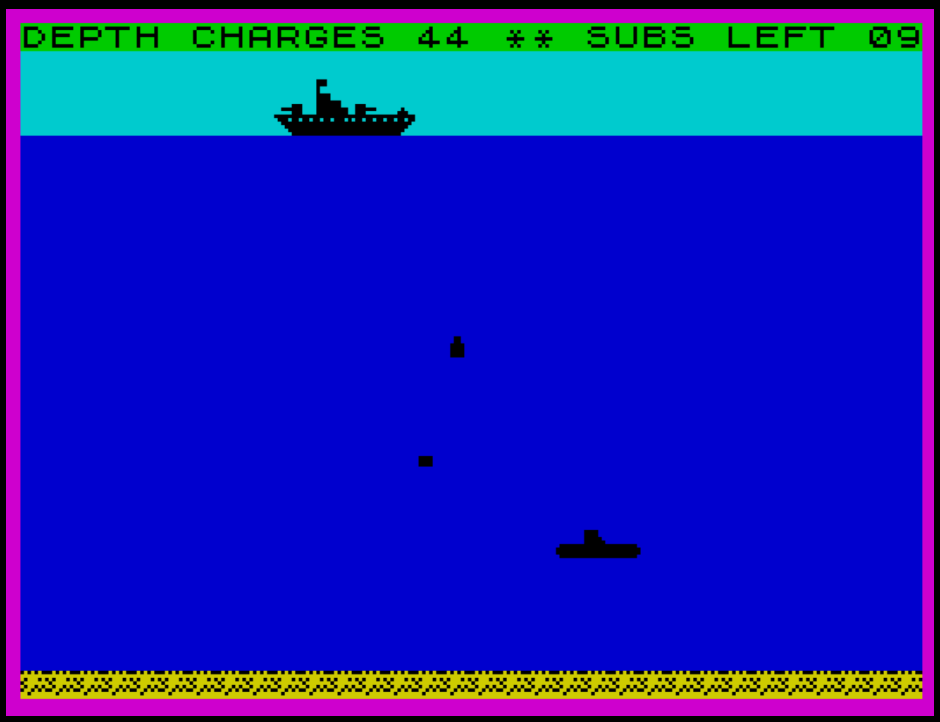
SUB CHASE

Publisher:	GEM Software
Year:	1983
Price:	£4.95



This is early 16k game and although it shows its age with crude graphics, jerky movement and poor sound, the gameplay is quite nice and I spent quite a time on this one.

The idea comes from an equally early arcade game called Sub Hunt and involves you controlling a destroyer trying to drop depth charges onto enemy submarines.

There have been many versions of this game on most early micros because the gameplay is simple and easy to implement. This version works well if you can get over the simplistic looks.

The game takes a slightly different approach to the arcade version in that the depth charges you drop have their own range and when they reach that level, they explode. This means you have to guess which level the enemy submarine is at. It's a sort of 3D Tanks in reverse. Also you only ever get one submarine at a time on screen, unlike the arcade version where you had multiple.

When a submarine appears, it travel across the screen left to right. It remains at the same depth and just keeps wrapping around until you hit it or run out of charges.

The submarines can also fire at you, though you can move your destroyer left or right, and like the submarines, this wraps around, appearing on the left again if you move off to the right.

The game has different levels with reduced charges to use against more submarines and also the submarines begin to change depth to avoid your charges.

To win the game you have to destroy a set number of submarines with the available charges.

I enjoyed this with only one issue and that was if you drop a charge and then immediately move right, you blow yourself up! Sometimes that's annoying, but apart from that, a great little early, simplistic game.

SUPERBIKE TRANS-AM

Publisher:	Codemasters
Year:	1989
Price:	£8.95

Here we have a game that is trying very hard to be Super Hang-On but failing badly. Yes it's a budget release from Codemasters, but there are so many things that are wrong.

The game has you riding a motorbike around various circuits in Florida and Alaska. To progress through the game you have to finish each section in the given time limit and of course avoid crashing into roadside obstacles and other riders.

When I first entered the race I was amazed at just how bad things look on the track. The stick-drawn things (I presume they are supposed to be lampposts?) look terrible and are not really smooth enough to give a 3D effect.

The inlay claims "ACTUAL JUMPS in full 3D!" Yes in this version you can jump to avoid things across the track, but this is not convincing at all.

The track itself is drawn using dots, which make it look poor, and although the game features hills and dips, the dots just move differently and the horizon (drawn using attributes) jumps up and down.

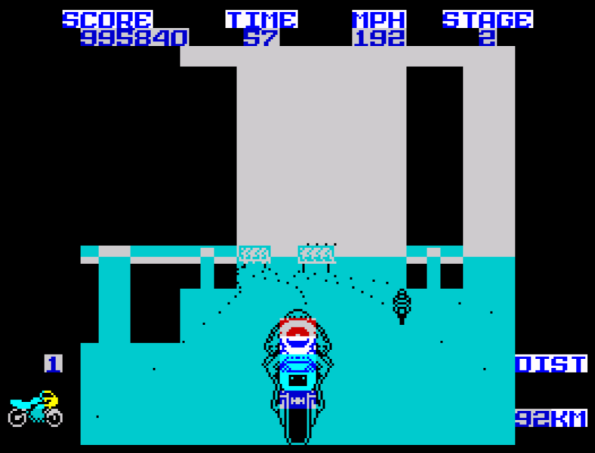
Just when you think it couldn't get worse, you complete the first section and move onto the next one, and the screen just looks like it's corrupted. Blocks of cyan and black everywhere that don't represent anything I can identify.

The bike has three frames of animation which are straight, moving left or moving right. If you jump some black and white 'smoke' appears in two character block on the back tyre.

Control does work quite well but there are times when you can't see what is up ahead because of the hills and can end up smashing into a stick lamp or other rider.

The sound works well too, with a nice engine sound and the sound of passing bikes.

For me, the best thing about this game is the loading screen.



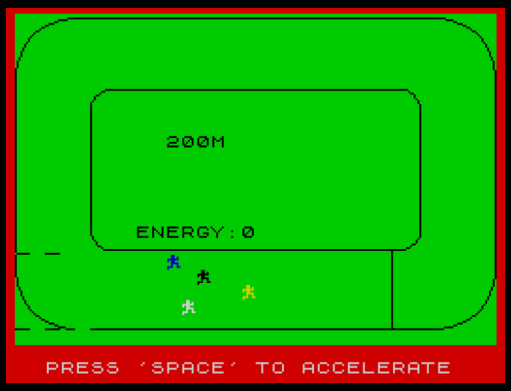
OLYMPICS

Publisher:	CRL
Year:	1984
Price:	£6.95

There are several track n field type games for the Spectrum, the better known one is Daley Thompson's Decathlon. Here then is CRL's offering, Olympics.

Initially you can change all of the team names and individual names, but this soon gets tedious and so you end up just using the ones already there. A nice feature is the ability to print off the instructions and details, so if you had a ZX Printer or compatible device, this may help you remember certain things.

The events on offer cover 100m, 200m, javelin, 110m hurdles, long jump, 400m, shot put, 800m and discus.

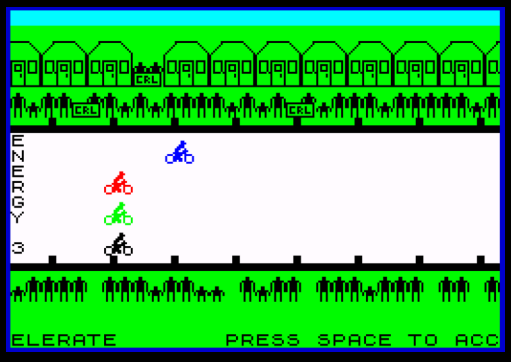


The first event, the 100m and we get a feel for the game, and it isn't good. The screen uses plot and draw to depict an oval running track with your 8-pixel men lined up and ready. The on-screen instruction say to use space to accelerate, but it isn't clear if this means hold space or tap space. Neither method seemed to work.

The 200m is pretty much the same as the 100m, only it lasts a bit longer!

The javelin has a different control mechanism and here you simply press space when you think the athlete is close to the line without going over it. The javelin is then launched and hopefully sails through the air for a good score. There is no control of angle or running speed.

Next we come to the 110m hurdles and this really shows the lack of programming skills. There is no jumping at all and the event uses the same mechanics as the 100m. The long jump uses the same mechanic as the javelin and you just press space at the right time.



The 400 metres again uses the same technique as the other running events and the shot put uses the jump mechanic, as does the final event, the discus.

At the end of the events played, you get a random number generated result for the other events such as 1500 metres, high jump and hammer.

Then it's onto side two of the tape – just when you thought it was all over. You now have to manually enter the medal counts from part one before you can play some other events such as cycling and swimming.

Cycling uses slightly better graphics but sticks to the same method of playing in that you control your energy by pressing the space key. The marathon is another similar event as is swimming and canoeing.

Overall this is a pretty poor sporting game and not very reliant on skill or knowledge of the sport. There are just two mechanics to use and both are hit and miss. The graphics are poor and the sound is limited to BEEPs.

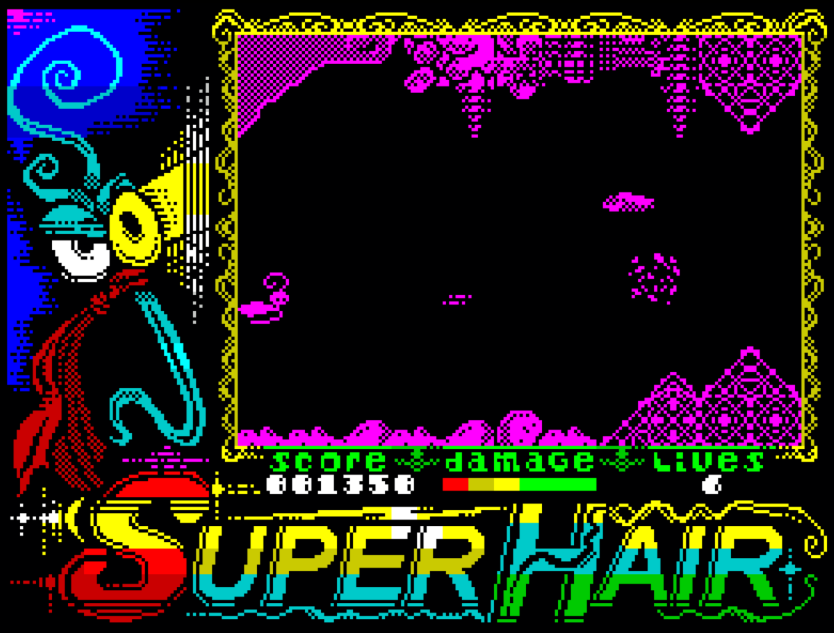
SUPERHAIR

Publisher:	Bitmapsoft
Year:	2021
Price:	£donate

The planet Hairtooine is under attack by the mutant empire. You are the only hope of survival, and you are a hair. A superhair.

Yes, a crazy story but then again it's a shoot-em-up and most of those have similarly silly stories.

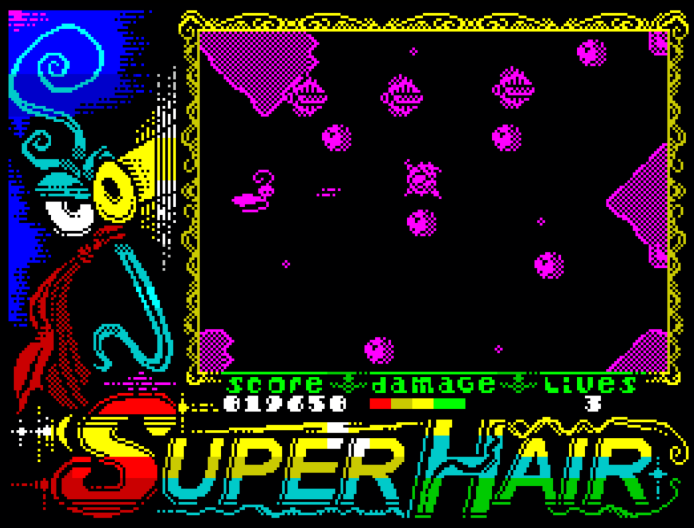
Created using SEUD (Shoot-em-up Designer) this is a fine example of what that tool can do, and it also looks like the authors have improved the engine from my experience of using the original.



This is a horizontal scrolling game and the scrolling is very smooth, which is no surprise because of SEUD. The graphics are well drawn and animated and the game excels at presentation with some great music and even speech.

The landscapes change per level but consist of monochrome blocks. They do look nice though and there is plenty of variation.

The game is hard though, too hard for me and I never managed to get beyond the first level. I did enjoy playing it though and you are given plenty of lives to use up.



Sound effects, originally poor on the original release, have been improved greatly and really add to the game. Control is crisp and responsive, and if you are a shoot-em-up fan, you should give this a try.

ARCADE CLUB

A VISIT TO THE BURY ARCADE CLUB

It has been nearly two years since Geoff or I have attended a retro event and so when a chance came up to visit the Arcade Club in Bury, we both booked in and headed off up the motorway.

The club boasts the largest video games collection in Europe and upon entering the first of three floors, we were met with a lot of modern games that, to be honest, we were not that interested in. The interesting floor for us was the top floor, the home to the classic arcade games.

It wasn't long before we were on the machines, all set to free play, and enjoying the feeling of those events we used to go to, and will be back at shortly.

The mix of games was impressive with many old favourites such as Galaxian, Centipede, Donkey Kong, Tempest, Pacman, Bombjack, Galaga, Tron, Afterburner, Burger Time, Operation Wolf, Moon Cresta, Nemesis, Pole Position and Q-Bert. The list could go on for a few more paragraphs, and it was great to grab a game. Most were very easy to get on at some point in the day and if they were busy when you went to the machine, a quick play of something else nearby would usually mean it would be free the next time you went there.

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The one machine that was constantly busy was the sit down Star Wars cab. Geoff managed to get a game, but despite passing the machine about 20 times, it was always busy. Sometimes with an age group who, to be quite frank, would not get the full benefit of the class shooter.

The middle floor had pinball machines that we both spent a bit of time on, but we were soon back up to the top floor for more arcade action.

All floors had a bar with the top floor also having somewhere to grab a pizza or burger.

The noise level was what we expected, loud. The masses of machines plus a constant 80's and 90's music video wall created the perfect atmosphere and the air conditioning meant the temperature was kept manageable, although it did got hot towards the end of the day.

The machines seemed to be reset every day, so you had a good chance of getting on the high score tables of most games if you were fairly good at them. I got top place on Moon Cresta, Phoenix and for a short period of time Moon Patrol. Geoff was top of Berzerk, Tron, Scramble, Time Pilot and Bombjack, again for a while. At the point we left I was only top on Moon Cresta with Geoff keeping Time Pilot (I think) and Tron.

It was a fantastic experience, and one we will be getting again as soon as we can arrange a date between us.

GRUMPY OGRE'S
Adventure Page

Welcome back to strange places where your mind wanders freely and your brain shifts into a higher gear.

This time I am going to be promoting something that has kept me entertained for months, and it is not a game but a book.

The Spectrum Of Adventure is a fantastic read for anyone who is in the slightest interested in interactive fiction. Written by Dr Tom Christie, the book covers so many subjects as part of its overall narrative of the most known and not so known, outstanding or indifferent, adventure games for the Sinclair Spectrum.

I have mentioned this book a few times in various places but only now, after finishing it, can I comment on the full experience.

This is not a book of reviews, it covers the companies, authors and stories of the games with insights into the history and structure along with how parsers have evolved over time.

It is a brief history (covering 100 games) of the genre on the Spectrum and is highly recommended. I contacted the author to convey my thanks on creating this wonderful book, and also to ask if I could reproduce one of the chapters here in this magazine. He very kindly agreed. So to get a feeling for just what this book is about, here is the full chapter on one of my favourite, and early adventures, Adventure 1 by Abersoft.

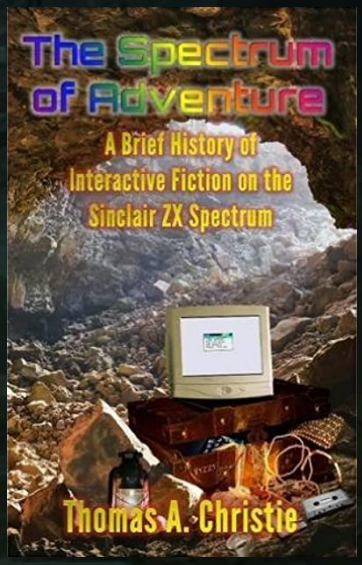
Adventure 1
Abersoft, 1982

One of the earliest text adventures to appear on the ZX Spectrum, *Adventure 1* was a home computer conversion of *Advent*, the revolutionary work of interactive fiction which had provided the foundation of the genre back in the mid-seventies. A truly landmark title, *Advent* was a legend to an entire generation of gamers, and its significance cannot be understated. In its fidelity to the original source material, *Adventure 1* would bring text adventuring to an audience of computer owners who were still exploring the early potential of Sinclair's iconic machine.

Advent was to receive a number of ports to the Spectrum over the years, sometimes with unexpected narrative and stylistic variations, but the Abersoft version of the title was arguably the most prominent edition of the game to achieve mainstream standing amongst audiences until Level 9 Computing were to release what has subsequently been regarded by many as the definitive eighties home computer iteration of the tale - *Colossal Adventure* - the following year.

Advent has become better known in computing lore as *The Colossal Cave Adventure*, and owes its genesis to American programmer Will Crowther. While working at the technological research and development company of Bolt, Beranek and Newman, Crowther developed the original game in FORTRAN on the firm's PDP-10 computer between 1975 and 1976, drawing on his extensive personal experience of cave exploration to inspire *Advent's* abundant map of locations. Shortly afterwards, computer scientist Don Woods was to discover Crowther's code and - with the original programmer's consent - set to work refining the gaming experience, adding new embellishments and increasing the fantasy content of the game. By 1977, *Advent* had taken the form of the interactive fiction milestone that it has become today, and ensured that the names of Crowther and Woods would forever be synonymous with the early days of the genre.

It is difficult to overemphasise just how influential *Advent* has been to the genesis of the text adventure. Quickly gaining a cult reputation, it was ported to many systems even in the most formative period of the home computing revolution, and today the game can readily be found (in a vast number of



different configurations) via online interpreters or even mobile apps. An even earlier - if abridged - adaptation arrived on the Sinclair ZX81, considerably simplified for the machine's limited hardware, in the form of Graham Thomson's *Adventure-Writing Kit* in 1981, but it was not until the arrival of *Adventure 1* the following year that the game would appear in its full glory on the Spectrum.

```
You are in a debris room filled
with stuff washed in from the
surface. A low wide passage with
cobbles becomes plugged with mud
and debris here ,but an awkward
canyon leads upward and west . A
note on the wall says 'Magic
word XYZY'.

About you can be seen

A three foot black rod with a
rusty star on the end
```

Advent has become one of the most heavily analysed of all text adventure games, its narrative dynamics forming the basis for numerous scholarly studies over the years by academics from across the world. Even today, the non-linearity of the user experience that is presented remains striking: the game features an ingenious range of goals for the player to achieve, and these can be completed in a number of different sequences depending entirely upon user preference. The program was truly innovative and, although *Advent* was one of the first known examples of interactive fiction, its execution was anything but primitive.

From a deceptively simple premise of hunting for treasure in a cavern complex (Crowther and Woods refrained from imposing too intricate a plotline on the game, increasing the universal appeal of the action), the title's atmospheric sense of claustrophobia, inscrutable maze systems and clever object-based puzzles laid the groundwork for everything from the Great Underground Empire of Infocom's seminal *Zork* (1977) through to the vast D'ni underground civilisation of Cyan Worlds's Uru: *Ages Beyond Myst* (2003). Though many have taken the trip along the legendary gully, unlocking the steel grate and taking their first tentative steps into the stygian darkness of the cave complex, the experience still feels surprisingly fresh even in the here and now.

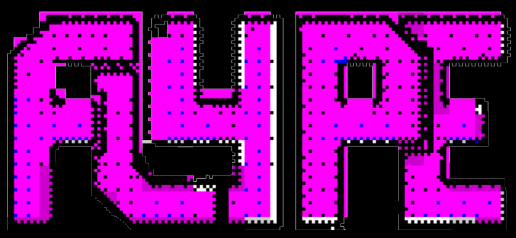
So much about this game has become iconic, from the opening appearance of the infamous 'small brick building' (a well-house which later becomes a makeshift treasure repository) to the trusty 'shiny brass lamp' that would prove to be the indispensable companion of many an adventurer thereafter; *Advent* was to present many tropes which would be replicated and parodied repeatedly throughout the early years of the genre and beyond. Nestled amongst these conventions was the appearance of the magic words 'XYZZY' and 'PLUGH', the utterance of which - under certain particular circumstances - would cause the player to be inexplicably transported between locations... and instantly became the stuff of tongue-in-cheek genre in-jokes for decades to come.

```
A vending machine. The sign on
it reads 'Drop coins for new
batteries'

inven

You are holding
A large set of keys

A brass lamp shining brightly

A small wicker cage

Precious Jewellery

Lots of rare coins
```

The popularity of Abersoft's adaptation of the game benefited from its subsequent re-release by CP Software (with the title of *Colossal Adventure*) and Melbourne House (as *Classic Adventure*), which raised its profile above many other iterations of the game which were to emerge at around the same period of time. *Adventure 1's* programmer John Jones-Steele would achieve success with maze-based arcade-style games such as Mazeman (1983) and The Wizard's Warriors (1983), but was perhaps better recognised for his work on later interactive fiction games for the Spectrum which included *Mordon's Quest* and *Knight Orc*.

Jones-Steele's version of the game remains loyal to the charm and subdued humour of the original, right down to the seemingly-endless 'twisty little passages' and retention of the in-game scoring system that made the game so memorable for its first wave of players back in the late seventies. Such was its mass consumption by gamers, *Adventure 1* has become so ubiquitous that it is, of course, difficult to think of it as simply a Spectrum game per sé. But for many users it was to be their first taste of interaction with a 'verb-noun' interface, paving the way for future games of increasing sophistication and setting the bar very high as it did so. Though Level 9 were to refine the Advent experience still further in 1983, *Adventure 1* made for a noteworthy early effort in producing interactive fiction for a mainstream home computer audience, and was a formative demonstration of what could be achieved with the 48Kb of memory boasted by Sinclair's machine.

You can get this book from the following website: https://www.extremispublishing.com/the-spectrum-of-adventure.html



Publisher:	Repixel8
Year:	2015
Price:	£0

Flype is a platform puzzle game that has you controlling the character Flype. His task is to fill bubbles and avoid getting killed by the roaming enemies.

Flype has a control mechanism that differs from many puzzle games and reminds me of Toofy In Fan Land. Using left and right you move him around the walls and pressing fire will send him hurtling in the opposite direction. Using these simple yet tricky controls to get him around the various layouts and screens.

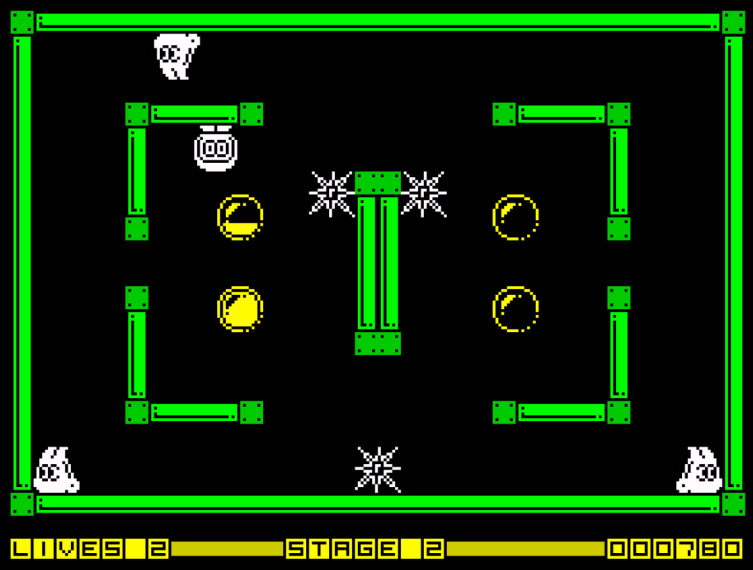
On each screen are a number of bubbles and these have to be hit three times to fill them up. Once all are full, the levels ends and you move onto the next one.

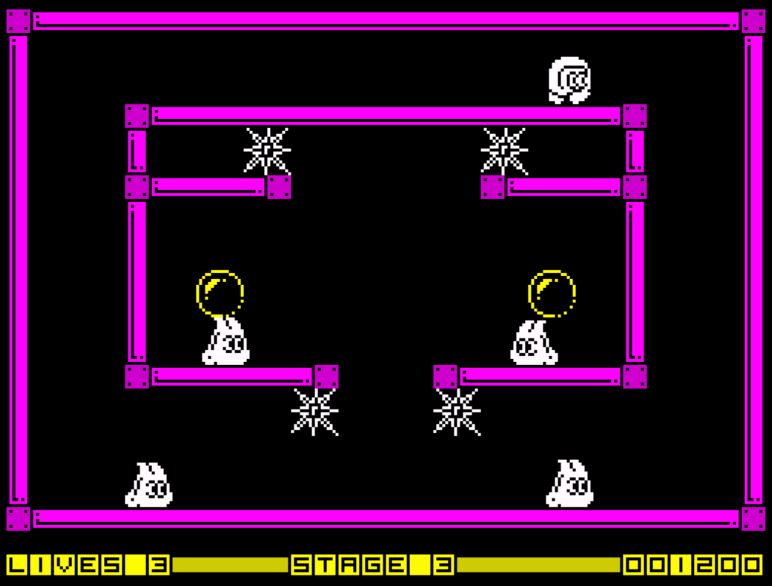
Some levels have rocks that need to be broken by jumping onto them, and spikes that need to be avoided along with various other things that change Flype's direction or kills him.

The graphics are very well drawn and animated and the gameplay eases you into the levels slowly, gradually getting harder and giving you new things to deal with.

This is a great game and the levels certainly get harder in later levels with chasing enemies and enemies that empty bubbles that have been filled.

Recommended for fans of this style of game.





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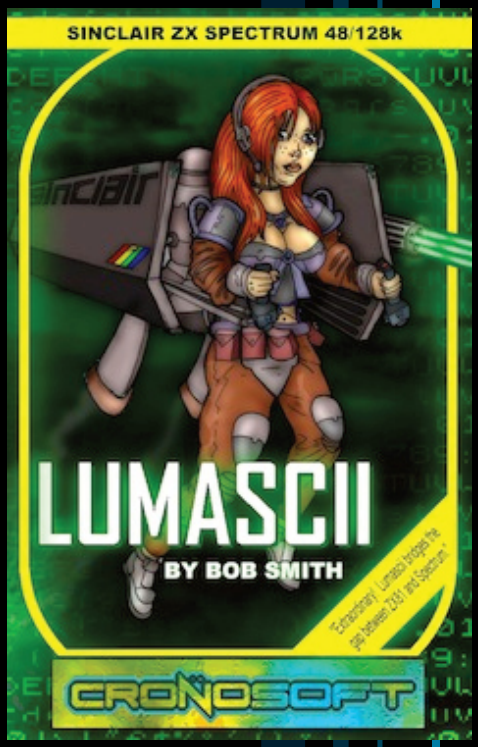

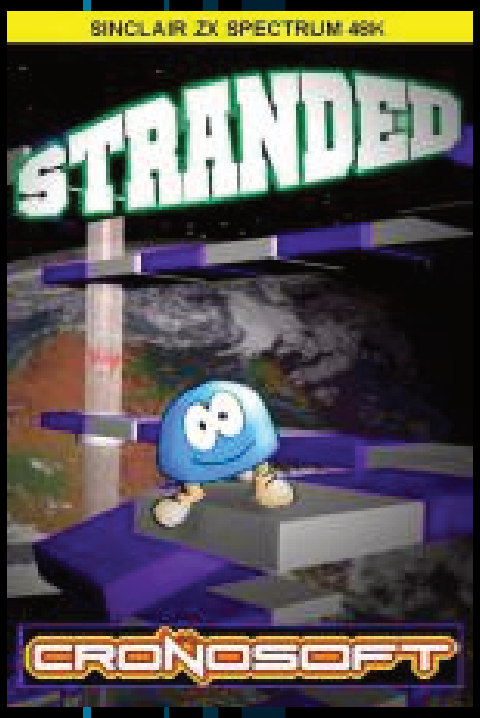

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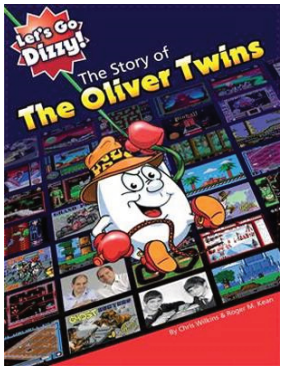

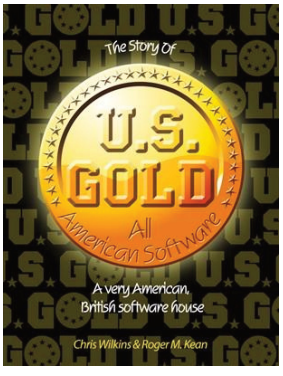

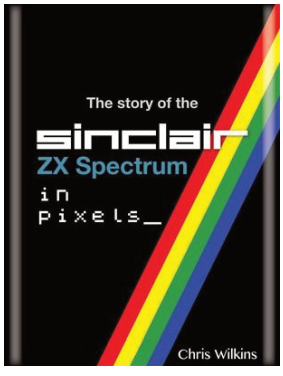

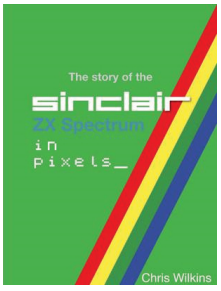

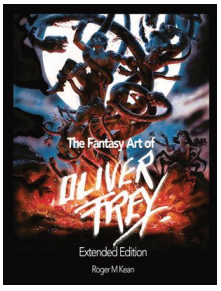

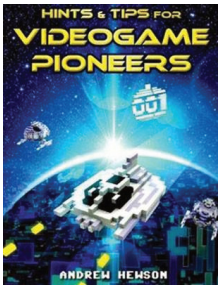

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